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AIR AMBULANCE REVIEW

Final Report



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AIR AMBULANCE REVIEW

March 1994

The Honourable Ruth Grier
Minister of Health
Government of Ontario
Toronto, Ontario

Dear Ms. Grier:

We are pleased to submit the Report of the Air Ambulance Review.

As your Terms of Reference directed us, we have examined the standards and the service levels provided by the air ambulance section; the methods employed to select companies/organizations for contracting air ambulance transportation; the methods employed to maintain close partnership with suppliers in making continuous quality improvements to safety, efficiency and user satisfaction for air transportation; the provision of medical quality assurance for the service; the general management system established and employed to oversee the program and to ensure contracted carriers' conformance to established standards and quality principles; the role of Transport Canada; and the safety records between 1981 and 1992. Widespread consultations with key stakeholders have enriched our deliberations.

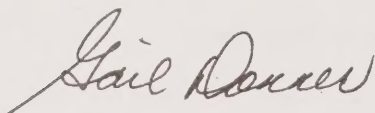
We offer a number of recommendations dealing with these issues. We recommend a provincial utilization review to inform decisions and guide policy development; a new method of contracting with chartered carriers; strategies to address recruitment and retention problems of advanced life support paramedics; and a committee structure to oversee policy development, air carrier quality control, and ongoing improvements in patient care and quality assurance practices.

Underlying principles for these recommendations include needs-based planning, data- and research-based decision making, widespread input from stakeholders, effective communications, and a team approach to providing the service. Finally, we identify five critical success factors that must be put in place if successful changes are to be made in the air ambulance service. These factors are: purpose, structures, stakeholder relationships,

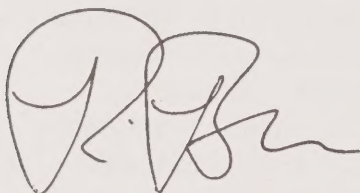
strategic orientation to service, and a commitment to implementation. In order to assist with implementation, we offer a work plan that sets out the priority and timing of the recommendations.

We believe the implementation of these recommendations will lead to a more efficient and effective air ambulance service for the citizens of Ontario.

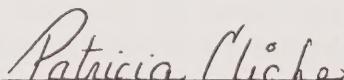
Yours sincerely,



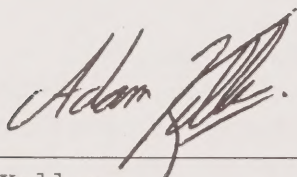
Gail J. Donner
Chair



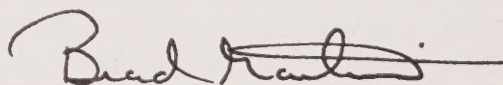
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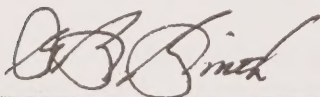
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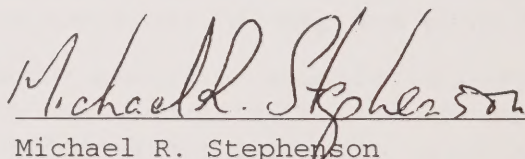
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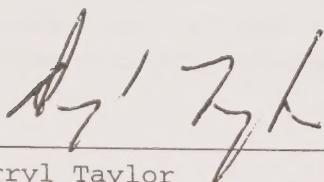
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AIR AMBULANCE REVIEW FINAL REPORT

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Review Committee Chair

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Acknowledgements

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We were fortunate in having the highly professional services of Dan Liebman, who helped us with the final editing.

Hank Brown, manager of the Air Ambulance Section, and the staff in the Emergency Health Services Branch reviewed our material for accuracy and provided us with essential documents and information.

Health care professionals in all settings responded to our requests for information, for submissions, for interviews, and for visits to their institutions. They gave generously of their time and expertise.

Members of the public, through discussion and submission, ensured that we remembered that the important users of the air ambulance system are the citizens of Ontario and that the quality of the care provided to them is the best measure of the success, efficiency, and effectiveness of the system. We hope that this report reflects our commitment to ensuring that quality.

Executive Summary

The Ontario air ambulance service conducted more than 17,000 transfers in 1993. About 3,000 patients had life-threatening conditions. An additional 4,800 were stable, but suffered serious injury or illness. The public can be assured that the majority of all transfers were conducted successfully. Indeed, official safety records indicate that there have been very few accidents.

The service is, however, becoming a victim of its own success. The number of air ambulance transfers has increased so rapidly that the service is scrambling to meet this demand, and there are calls for greater public accountability. As well, the service must respond to the profound changes happening within the health care system. It was quite timely, therefore, that in May 1993 the Minister of Health, Ruth Grier, announced an independent review of Ontario's air ambulance system.

The Terms of Reference centred on patients and their safety: the standards and service levels provided to critically ill and not so critically ill patients; the ways in which patients are transported; air carrier selection, safety, efficiency, and conformance to quality standards; and medical quality assurance for the service.

The Review was conducted by a committee with representatives from health, labour, aviation, and relevant government agencies. Discussions and deliberations were informed by consultations with a wide range of stakeholders, by a review of literature and data, and by background studies prepared especially for the Committee.

The air ambulance service is a highly public activity subject to intense scrutiny. This report and its recommendations focus on building a strong system that will meet this scrutiny directly. Such a system anticipates change rather than reacts to it. It is based on strong partnerships between providers and consumers, and between health care and aviation. And it coordinates efforts, upholds quality standards, and emphasizes public education and effective communications. Above all, the system is responsible to the patient, constantly monitoring, evaluating, and improving the quality of the service so that patients and their families can be assured of safety.

The Committee has attempted to recommend doable, practical, and economically feasible changes to improve the system. Underlying principles are set out as a starting point. It is recommended that the management and organization of the service include needs-based planning, data- and research-based decision making, widespread input from stakeholders, effective communications, and a team approach to providing the service.

The critical recommendation is an external provincial utilization review of the air ambulance service. The information from this review will provide a foundation for successfully implementing the other recommendations. This recommendation responds to the current lack of information needed to make solid decisions and guide policy development for the service.

To address problems involving the aviation component of the service, it is recommended that the standing offer agreement for chartered

carriers be replaced by a method of contracting through which selected carriers are awarded rights as preferred providers for a region. Additional aviation recommendations include a routine review and assessment of standards and equipment, and the establishment of an operations plan to conduct systematic audits and inspections.

To address problems involving the health care component of the service, a number of key areas are targeted. It is recommended that the current system for coding patients be reviewed and assessed in order to make it more sensitive to the patient and the situation. Similarly, the Committee believes that certain responsibilities must be clearly delineated. It is the responsibility of the Medical Air Transport Centre to arrange transportation, and the responsibility of the physician to make decisions about the patient's condition and his or her need to be transported. Furthermore, consultation with appropriate physicians must take place whenever a conflict exists over which one of two critically ill patients needs to be moved first. Since a number of proposed changes will affect the roles of staff in the Medical Air Transport Centre, it is recommended that a review be conducted of the positions in the centre and that staff be supported with additional training, where necessary.

A great deal of confusion exists among consumers and providers about the skills and abilities of escorts who accompany patients. It is recommended that the title of each air escort clearly reflect the level of training he or she has, and that a clear job description of the role of the cabin medical attendant be developed.

Escorts must also be better trained. It is recommended that a self-directed training program be developed to help hospitals educate staff who function as hospital escorts, and that problems with the Aero-Medical Transport program be addressed. A serious shortage of air advanced life support attendants (paramedics) has resulted in dedicated aircraft often flying without the acceptable complement of two ALS attendants. The Committee recommends that, as standard practice, each dedicated aircraft have two ALS attendants 24 hours a day. To address shortages, it is recommended that the Ministry of Health divest itself of the responsibility of training air ALS attendants, that the Human Resources Branch recruitment process be streamlined, and that the Ministry of Health and the Ontario Public Services Employees Union act immediately to settle the grievance outstanding since 1985 involving reclassification of paramedics.

Education and communication must be improved. At present, there is confusion about what the service is, what it is not, and how it is to be used effectively. Information documents and programs should be developed for the public, health care providers, and others. In addition, standardized information forms need to be developed.

To ensure quality assurance throughout the system, it is recommended that the proposed chartered system become an integral part of the base hospital system. A definitive list of medical equipment for both dedicated and chartered air carriers must also be developed.

In order to address all the proposed changes systematically and in a manner that involves the key stakeholders, it is recommended that a committee structure be established that includes a joint committee, an air carriers' committee, and a health care committee.

Finally, a number of critical success factors are necessary to ensure that the recommended changes are made in the air ambulance service. These factors are: a clear sense of purpose; supporting structures (which include appropriate links with the broader bureaucracy, better coordination of the air and land ambulance systems, and supports internal to the section); effective stakeholder relationships; a strategic orientation to service; and a commitment to implementation. As part of this last factor, and in an effort to achieve the greatest impact from the recommendations, the Committee has developed a work plan to guide decision makers as they work towards strengthening the air ambulance system.

Part One
Introduction

The Air Ambulance Review

On May 11, 1993, the Minister of Health, Ruth Grier, announced an independent review of Ontario's air ambulance system. The review was to advise the Minister on the provision of safe and timely air ambulance transportation.

The Terms of Reference for the review were to:

1. Examine the standards established and the service levels provided by the air ambulance section for patients who are critically ill as compared to those persons transported who are not that ill;
2. Examine the methods employed to select companies/organizations for contracting air ambulance transportation;
3. Examine the methods employed to maintain close partnership with suppliers (contracted carriers) in making continuous quality improvements to safety, efficiency and user satisfaction for air transportation;
4. Examine the provision of medical quality assurance for the service;
5. Examine the general management system established and employed to oversee the program and to ensure contracted carriers' conformance to established standards and quality principles;
6. Examine the role of Transport Canada in (1) and (5); and
7. Examine the safety records between 1981–1992.

The Review Committee

A Review Committee was established with representation from constituencies identified by the Minister in her announcement. Committee members represented the Provincial Emergency Health Services Advisory Committee, the Ministry of Natural Resources, Transport Canada, dedicated aircraft operators, standing offer agreement aircraft operators, and labour. (Members and affiliations are listed in Appendix B at the end of this report.) The Committee held its first meeting on June 15, 1993, and met ten times over the course of the Review. The Committee also conducted consultations in seven locations throughout the province.

Review Strategies

Three strategies were used for the Review. These included conducting consultations, reviewing literature and data, and preparing background studies. Committee members used the results of all three strategies to inform their discussions and to develop their recommendations.

Consultations

Consultations were conducted with a wide range of stakeholders (Appendix C). These consultations included:

- Committee visits to the dedicated air ambulance bases in Sioux Lookout, Sudbury, Thunder Bay, Timmins, and Toronto. Input was sought from base managers, paramedics, base medical directors, and other hospital staff.

- Public meetings hosted by the Committee in Sault Ste. Marie, Sioux Lookout, Sudbury, Thunder Bay, Timmins, and Wunnumin Lake. Input was sought from the public.
- Oral and written submissions received at the office of the Review. Input was sought from the public and providers. Notices were placed in newspapers, and a number of professional associations were asked to encourage their members to make submissions.
- Staff interviews. Input was sought from staff in the Air Ambulance Section and the Emergency Health Services Branch in order to gather perspectives of those working in the air ambulance area.

Literature and Data Review

The Committee reviewed numerous reports, audits, and inquiries highlighting the air ambulance system. In addition, utilization data were obtained from the Air Ambulance Section and safety records were secured from the Transportation Safety Board of Canada. Information was collected from other provinces regarding their air ambulance systems (Appendix D). These activities allowed an overview of the Ontario system and helped to identify potential directions for the future.

Background Studies

A series of background studies was developed for the Committee (Appendix E). Studies were prepared on the organization of the service; aircraft contracting; dispatch; standards and inspections—aviation quality control; patient

care and quality assurance; and other areas for review. (Technical details included in the report are generally cited in the background studies.)

The Review in Context

The Air Ambulance Review is an independent review that was conducted at arm's length from government.

Independence of the Review

Although members of the Committee originated from groups involved either directly or indirectly in air ambulance services, the role of individual members was to contribute their areas of expertise to all Committee discussions rather than to represent their particular group on the Committee.

During the consultations, individuals who made submissions to the Committee were informed that the Committee represented neither government nor the Ministry of Health. The role of Committee members was neither to defend nor to criticize government, but to gather as much input as possible in an effort to identify concerns and to inform Committee discussions.

Air Ambulance Services within the Emergency Health System

The air ambulance service is one important component of the larger emergency health system. As depicted in the following diagram, one of the key challenges for the Committee was to address the Terms of Reference while recognizing the interrelationships that exist

among the air ambulance system, the land ambulance system, and emergency health services in hospitals and communities.

Emergency Health Services



The Committee is aware that a number of individuals and groups were sceptical about the appropriateness of an air ambulance review. Some felt that the whole emergency health system needed to be examined, while others felt that attention should be directed either at the land ambulance system or at emergency health services in hospitals and communities.

A number of initiatives taking place at the time of the Review focused on other components of emergency health services. One initiative was the Ambulance Study Committee, which was struck in September 1993. Its purpose was to produce a proposal for a governance structure for emergency health services (excluding the Metro District Ambulance Service) in order to

improve service within the existing budget. That committee's report noted that a consensus could not be reached on which governance option to recommend: modified status quo, or government as the sole employer.¹ The report concluded that government needs to decide whether it supports being the sole employer for emergency health services. If support is forthcoming, a schedule 4 commission would seem to be the best governance structure. Such a structure allows employees to stay with their existing bargaining agent rather than be required to join the Ontario Public Service. The report noted that independent costing should be done only if necessary.

A second initiative is a study of hospital- and community-based emergency care. On November 16, 1993, a consultation workshop was held for major stakeholders. The purpose of the workshop was to share information; to ensure that the pressures identified reflect the experience of stakeholders; and to seek input on the proposed purpose, goal, terms of reference, and organization of the study. A committee to oversee the project and a number of working groups have since been established. The review is expected to be completed by about the spring of 1995.

A third initiative is a revision of the Northern Health Travel Grant Program, which financially assists individuals living in the North who must travel to receive treatment. Reimbursement for mileage is being reduced, and the amount the Ministry will pay towards travel costs will be based only on the distance between the patient's home and the nearest appropriate specialist or designated health facility.

¹ "Report of the Ambulance Study Committee." Mark Cox, Chair. December 10, 1993.

Air Ambulance Services within the Health Care System

The health care system is undergoing rapid and profound change. Since the air ambulance program emphasizes interfacility transfers, the changes in hospitals will have a substantial impact on air ambulance services. In January 1992, the Ministry of Health released its reform agenda in a set of strategic priorities.² It included planning principles for health services reform such as a rationalization of hospital services, improved linkages for coordination, and a review of services provided by small hospitals. The result will be a better-defined hospital system, with some hospitals providing a range of specialty care and others providing basic care and stabilization. Budget constraints will lead to less duplication of resources, less willingness to provide certain services, and a worsening of some problems that already exist (notably, a scarcity of physicians and other health care providers in underserved areas). These changes will result in more patients being transferred from where they are located to where the resources exist. Less well equipped hospitals, with limited staff, will increasingly look to ambulance services to move patients to larger centres quickly. Hospitals will also be less able to send staff to escort patients who are being transferred.

The Ministry's reform agenda emphasizes community care and de-emphasizes institutional care. As more care is provided outside of hospitals, there may be a need to redefine eligibility for air ambulance services, going beyond interfacility and on-scene transfers.

The call for more effective and efficient use of scarce resources is being directed at all health services. Gaps and duplications in emergency health services were identified by the Committee over the course of the Review. Among them: an overlap between air and land services where the guidelines are unclear, inconsistent, not communicated, and not enforced; a potential for duplication between the Northern Health Travel Grant Program and the air ambulance service; and problems of equal access in the North and other underserved areas. These gaps and duplications must be addressed as part of the provincial health system reform. As well, a comparative examination of the system's components is needed. For example, instead of developing transportation systems to move patients out of underserved areas, the problems may be solved more effectively either by developing services in these centres or by using technology to improve access to professional expertise.

Underlying Principles

The Committee recognizes that Ontario has an air ambulance system that has grown dramatically and is regarded as one of the largest and most complex in the world. The service provided is highly valued. Safety records indicate that the overwhelming majority of transfers are successfully conducted. Air Ambulance staff are to be commended for meeting the increasing challenges of providing this service.

The Committee recognizes that the Air Ambulance Section faces increasing demands for service and public accountability. In

² Ontario Ministry of Health. *Goals and Strategic Priorities*. January 1992.

keeping with the Terms of Reference, careful consideration was given to examining the current service and identifying problems and concerns. Attempts were made to recommend doable, practical, and economically feasible changes to improve the system. The recommendations in this report are both short term and long term in nature.

It is the opinion of the Committee that certain fundamental principles must underlie the delivery of air ambulance services. These principles represent a philosophy or approach that builds upon, and goes beyond, quality assurance and risk management and moves towards ongoing improvement of the quality of the air ambulance service. These principles must be used to assess the adequacy of current and proposed policies and programs.

The Committee recommends that:

- 1. Underlying principles that support the management and organization of air ambulance services include:**
 - matching service to needs;
 - solving problems with the aid of data and research;
 - using formal mechanisms to seek input from, and to communicate with, all stakeholders;
 - fostering a team approach among staff, health care providers, and air carriers with the common goal of providing a quality service; and
 - monitoring, evaluating, and improving practices and processes on an ongoing basis.

Part Two
The Issues

Chapter 2

Introduction to the Issues

Part Two of this report presents the six major air ambulance issues that the Committee discussed and debated at length. The Terms of Reference set the context for these discussions.

Chapter 3, Organization of the Service, examines the main service streams and how they are organized to transfer patients according to severity of condition. Chapter 4, Aircraft Contracting, reviews the different arrangements used to contract for air carrier services. Chapter 5, Dispatch, identifies the activities performed in the Medical Air Transport Centre (receiving requests for air transportation, collecting patient information, and arranging an appropriate aircraft to transfer the patient). Chapter 6, Standards and Inspections—Aviation Quality Control, examines the process by which aviation standards are established and looks at how they are monitored through audits and inspections. Chapter 7, Patient Care and Quality Assurance, is a review of medical equipment, the roles and responsibilities of various players during a patient transfer, and the mechanisms for health care quality assurance. And Chapter 8, Other Areas for Review, describes administrative relationships between the Air Ambulance Section and other bodies, reviews pertinent legislation, and considers the management information system (MIS) and user information and education. This chapter also briefly describes issues related to repatriation, altimeters, and the multi patient transfer unit.

For each topic, background information is presented to familiarize the reader with the facts behind the issue. This descriptive section is followed by the Committee's observations and recommendations.

Although issues are presented individually, they do overlap. Where overlap occurs, the reader is referred to relevant issues that are presented elsewhere in the report. Recommendations are included within each chapter and appear in consolidated form in Chapter 10.

The reader is encouraged to refer to the background studies that were prepared for the Review. These studies present an in-depth factual overview of each issue.

Air Ambulance is organized into three main service streams: dedicated, chartered, and scheduled commercial. Patients are serviced by the most appropriate stream, depending on the severity of their condition. Severity is represented by a numerical code ranging from 1 (least serious) to 4 (most serious). There are seven transfer types: first response, on-scene assistance, interfacility transfers, team transfers, organ transfers, patients travelling out of Ontario, and patients travelling into Ontario. Generally, the dedicated system is designed to transfer the more serious patients while the chartered system is designed to transfer the less serious stretcher patients. Scheduled commercial aircraft are used to transfer the less serious ambulatory and/or wheelchair patients.

Aircraft

Dedicated air ambulances are aircraft under long-term contract to the Ministry of Health (MOH) and dedicated for exclusive operation as air ambulances. They have modified interiors fitted to accommodate patients, health care staff, and specific advanced life support equipment. These aircraft are always flown by two pilots, who are employed by the air carrier, and are staffed by Ministry-employed medical personnel with advanced life support training. Government hangars accommodate these aircraft. The dedicated service is a 24-hour operation. Five dedicated bases have these aircraft: Sioux Lookout and Timmins have dedicated fixed-wing aircraft (airplanes); Sudbury, Thunder Bay, and Toronto have dedicated rotary-wing aircraft (helicopters).

Chartered and scheduled aircraft transferred all patients before the dedicated service was established in October 1977, in Toronto. This pilot project used a helicopter for the transport of critically ill or injured patients primarily within an 80-air mile radius of Toronto. Between October 1977 and October 1980, the helicopter responded to approximately 700 calls. In March 1980, the Province announced its intention to improve the standards and cost effectiveness of air ambulance services in Northern Ontario by using dedicated aircraft. Approximately 4,000 air transfers from and within Northern Ontario were conducted that year. Consultants then divided the province into study zones that traced the volume and direction of transfers from various locations. To provide an estimate of possible demand, they examined the population within a specified radius of four potential aircraft base stations (Sioux Lookout, Sudbury, Thunder Bay, and Timmins). Air ambulance program objectives for Northern Ontario were established and reviewed, and it was decided that short-term pilot services would be set up in the four base locations using two fixed-wing (airplane) and two rotary-wing (helicopter) aircraft.

Chartered aircraft are under standing offer agreement to the Ministry of Health to provide air transport service for non-emergency patient transfers, for emergency patient transfers if dedicated air ambulances are in use or are otherwise unavailable, for the transport of medical teams, and for the transport of organs or organ donors for transplant surgery. These aircraft are not normally used exclusively for patient transfers. They are used on an as-needed basis and are called when required. The pilots and cabin medical attendants are the

employees and the responsibility of the carrier. The cabin medical attendants are either trained emergency medical care assistants or registered nurses/registered respiratory therapists who have completed additional Ministry- and Transport Canada-approved courses. Carriers must satisfy pre-qualification conditions in such areas as minimum standards for flight operations, the provision of basic medical and survival equipment, and inspections. Twenty-three charter companies have standing offer agreements with MOH.

Scheduled aircraft are used for patient transfers within Ontario, from another province back to Ontario, and from another country back to Ontario. Within the province, scheduled aircraft transport patients who may or may not require in-flight medical care and who may or may not be confined to a stretcher. Scheduled aircraft are not required to provide in-flight medical care or equipment. These are the responsibilities of the sending facility or agency.

Trends

In 1982, 8,126 patient, team, and organ transfers were carried out. By 1993, the figure had increased 115 percent to 17,484 transfers, with charters conducting 72 percent, dedicated conducting 25 percent, and scheduled aircraft conducting 3 percent of transfers. As well as conducting the most transfers, chartered aircraft experienced the greatest rate of growth; from 1982 to 1993, the number increased 205 percent. Dedicated flights increased 99 percent, while scheduled flights decreased 72 percent.

Patients

Whenever possible, critically ill patients are transferred within Ontario on dedicated aircraft. The less seriously ill are transferred on chartered or scheduled aircraft. Patients returning from outside the province to Ontario hospitals are transferred by chartered or scheduled aircraft.

The *Air Ambulance Utilization Guide* is the formal reference for educating users about the air ambulance system. The guide states that the patient-transfer policy is to respond without delay to emergency transfers of critically ill patients, and to require a minimum notice of 24 hours to book transfers for the less critically ill. Patients are assigned a code from 1 to 4, depending on the severity of their condition. The Medical Air Transport Centre (MATC) call taker is responsible for assigning a code to the patient. Codes are defined as follows:

Priority 1 **Deferable** — Routine.

Priority 2 **Scheduled** — Must be done at a specific time; demand for equipment/personnel is such that failure to meet appointment times would result in the patient's not receiving prescribed care (specialized scans, chemotherapy, etc.).

Priority 3 **Prompt** — Patient is suffering from serious injury or illness, but is in stable condition or is in the care of personnel who are in the process of stabilizing the patient.

Priority 4 Urgent — Life-threatening situations. Time is critical: patient is not medically controlled, and level of care available is not sufficient to provide for stabilization.

Call takers request certain information to determine the priority of the patient (see Chapter 5, Dispatch). In addition, they refer to the *Guidelines for Prioritizing Interfacility Transfers*. Code definitions are not included in the *Air Ambulance Utilization Guide*, with hospitals writing their own definitions. (Comments on the adequacy of the current coding system are included in Chapter 7, Patient Care and Quality Assurance.)

According to air ambulance data, priority 1 calls have decreased from 51 percent of all calls in 1988 to 44 percent in 1993; priority 2 calls have generally remained consistent at 8 percent; priority 3 calls have increased from 25 percent to 30 percent; and priority 4 calls have generally remained consistent at 18 percent. There were 1,502 neo-natal transfers and 104 organ transfers in 1993.

Coordination of Aircraft and Patients³

The organization of the system into service streams is a logical approach to matching appropriate aircraft with the severity of the patient's condition.

More critically ill patients are transferred on dedicated aircraft, which have attendants trained in advanced life support (ALS) and are equipped with advanced life support equipment. Ideally, urgent (priority 4) calls are arranged immediately and use dedicated aircraft. Prompt (priority 3) calls are planned

quickly and use dedicated aircraft, if available. The ALS-trained attendants are suitably qualified to care for patients who have priority 3 and 4 conditions.

Less seriously ill patients are transferred on chartered aircraft, which have attendants trained in basic life support (BLS) and carry basic medical equipment. These priority 1 and 2 patients presumably have the luxury of time: they require 24-hour booking notice. The BLS-trained cabin medical attendants are regarded as suitably qualified to care for the conditions of priority 1 and 2 patients.

Examining transfers performed by charters and dedicated aircraft, one sees that between 1988 and 1993, chartered aircraft increased the percentage of priority 1 patients they transported from 89 percent to 98 percent (priority 1 transfers carried out by dedicated aircraft decreased from 11 percent to 2 percent). The percentage of priority 2 patients carried by charters also increased, from 78 percent to 99 percent, with dedicated transfer of priority 2 patients dropping from 22 percent to 1 percent. Charters also increased the number of priority 3 patients transported, from 40 percent to 57 percent (this increase was countered by a decrease in priority 3 dedicated transfers, from 60 percent to 43 percent). Finally, chartered carriers consistently transported 31 percent of priority 4 patients between 1988 and 1991. In 1992, this figure increased to 36 percent, and in 1993 it was 39 percent. Dedicated aircraft transported only 64 percent of priority 4 patients in 1992 and 61 percent in 1993.

³ This discussion addresses the dedicated and chartered services only.

COMMITTEE'S OBSERVATIONS AND RECOMMENDATIONS

It is the Committee's opinion that in the organization of the air ambulance system, three important areas must be addressed: review and evaluation, criteria for dedicated bases, and ongoing monitoring.

Review and Evaluation

The volume of patient transfers has doubled over the past 10 years. Air ambulance operations have expanded and been restructured in an attempt to meet these increased demands. If one examines changes in the health care system, it seems highly likely that even greater demands for air ambulance services will exist in the future. Hospitals are downsizing and rationalizing their services. Facilities are becoming more specialized, and the days of hospitals having the resources to be "all things to all people" are becoming a thing of the past. Transporting people from smaller facilities that can diagnose or stabilize patients, to facilities that can provide necessary services, will become increasingly important. The air ambulance service must be able to adapt to the increasing demands for its services. Such adaptation does not mean automatic expansion of operations; fiscal constraints cannot, after all, be ignored. Rather, it means continuous evaluation of the effectiveness and efficiency of procedures and practices.

No comprehensive assessment has ever been undertaken on whether the dedicated system is adequate enough to transport all critically ill patients. The fact that chartered air carriers transported 39 percent of priority 4 patients in

1993 and 57 percent of priority 3 patients indicates that the chartered system no longer just "supplements" the dedicated service. Reasons have been suggested for this trend. For example, it would seem that sending hospitals are given the option of "timing"; rather than wait for a dedicated aircraft to arrive, the hospital can use a chartered aircraft, if available. However, the ultimate purpose of ongoing evaluation is to determine the changes that are necessary in order to make a service more effective, not to uncover the reasons why trends exist. No comprehensive assessment has ever been undertaken on whether the increasing demands on the charter system are appropriate. Rather, initiatives are undertaken to meet these demands. One such initiative, the multi patient transfer unit (discussed in Chapter 8, Other Areas for Review), was introduced without a rigorous evaluation component built into it.

Criteria for Dedicated Bases

The location of dedicated bases was a key issue raised during this Review. In Sault Ste. Marie, a dedicated base was seen as an important resource that the community needed in order to ensure certain levels of care. In Ottawa, a dedicated base was seen as a logical answer to high volumes of patient transfers into the city. However, because objective criteria do not exist for establishing a dedicated base, the Committee is in no position to comment on whether either of these communities should have one.

The lack of criteria leaves government open to criticism when the public demands accountability for how the service is being run.

The air ambulance service is a highly public activity that attracts a great deal of attention when something goes wrong. When the spotlight is on the system, reasonable and acceptable criteria are necessary for public accountability. When the spotlight is off, these criteria are necessary for ongoing quality improvements. (Suitable criteria would also be necessary to establish regional boundaries for a chartered air carrier service, as recommended in Chapter 4, Aircraft Contracting.)

The premise of a dedicated base is not to provide services to a community, but to get people quickly to the care they need. Anecdotal evidence suggests that call volumes justify the establishment of a dedicated site, with 900 annual calls used as the cutoff. A review of the current five bases indicates that from 1989 to 1993, two of the dedicated bases were almost consistently below the 900-call volume.

If volume is used as a criterion, the numbers must be defensible. Clearly, volume of transfers alone is not sufficient to justify the capital and operating costs of a dedicated base. Potential criteria for the location of a dedicated base might also include:

- A suitable airport with the facility for instrument flight approaches. (That is, aircraft should be based where they can be moved quickly.)
- A substantial number of patients coming into the community for the health care services that are available. (A review of physician transfer patterns would be required.)
- A suitable hospital that can serve as a base hospital for the dedicated site. (Assessments would be required of the range of hospital services and the expertise to monitor and train advanced life support (ALS) attendants.)

A number of fundamental problems with the current dedicated system came to the Committee's attention. The serious shortage of air ALS attendants and the use of dedicated aircraft for priority 1 and 2 transfers are just two of these. Before more dedicated bases are proposed, problems such as these must be addressed. If not, pressures on the system will increase further.

Ongoing Monitoring

A great deal of time and energy has gone into expanding the air ambulance service to meet increasing demands. This expansion has taken place at the expense of monitoring ongoing system changes, and, as a result, many unknowns exist. We do not know why volume has increased so drastically. (Is it because the service exists? Are people better informed? Are there more on-scene incidents? Have the constraints on the land ambulance service affected the demand for air—and in what ways?) Nor are we sure of the trends in provincial and regional transfer patterns. These questions must be answered so that the service can monitor the demands and address the problems. The problems identified above in the areas of review and evaluation, criteria for dedicated bases, and ongoing monitoring must be addressed.

The Committee recommends that:

2. An external provincial utilization review be conducted of the air ambulance service with the purpose of obtaining information to inform decisions and guide policy development. This review should examine such indicators as volume of transfers, patient codes, patient flow, physician transfer patterns, and costing. Critical issues that need to be addressed using such data include: criteria for dedicated air ambulance bases; the need for additional dedicated bases; regional boundaries for a chartered air carrier service; and the feasibility of the multi patient transfer unit.

The air ambulance service has different sets of contracting arrangements for dedicated and chartered air carriers. These arrangements are presented briefly, along with a discussion of the merits and problems of each.

Dedicated Aircraft

As noted in the preceding chapter, five aircraft bases constitute the Ministry of Health's dedicated air ambulance service. These bases are located in Sioux Lookout, Sudbury, Thunder Bay, Timmins, and Toronto. Aircraft at each of these bases are dedicated for exclusive operation as air ambulances.

The Ministry has contracts with private companies to provide all dedicated aircraft. These contracts are awarded through a competitive request for proposal (RFP) process. Contracts are for five years and permit two one-year renewals. The RFP outlines the need for the service and leaves it to the bidder to propose how these needs will be met.

The three principal criteria used to select a dedicated carrier include: the carrier's overall managerial competence, the technical and operational feasibility of the carrier and its base and schedule concept, and the projected contract price. When assessing proposals, the Ministry looks for a suitable aircraft service meeting patient transport needs with an emphasis on patient care, high safety standards, and economy of effort. A least-cost approach is balanced with the need to provide an effective air ambulance service.

Contracting for dedicated aircraft is generally the responsibility of Air Ambulance staff, although others are involved in the process.

These include staff from Transport Canada, from the Supply and Services Branch of the Ministry of Health (MOH), and from the Ministry of Natural Resources (MNR). These individuals have input into the drafting of the RFP, and some participate in evaluating the bids. Input into dedicated contracting is also sought from Air Ambulance base staff as well as from selected individuals with aviation expertise. Proposals are rank ordered according to a list of evaluation criteria. The final selection of a supplier and the costs associated with that company are vetted through a number of levels, including the Fiscal Strategies Branch of MOH, the Deputy Minister's Committee, and Management Board of Cabinet.

At present, proposals are being evaluated for the rotary- and fixed-wing air ambulance contracts. The previous RFP for rotary wing was in June 1986. The RFP advertised in September 1993 requested that a single carrier service all three rotary-wing dedicated sites. Air Ambulance Section staff believe that a single carrier will reduce costs and simplify the service's administrative operations. Consortium bids are being allowed, but subcontracting is not. The RFP for carriers to service the two fixed-wing dedicated sites was advertised in January 1994.

Chartered Aircraft

The Ministry of Health has short-term contracts with chartered aircraft. Carriers that wish to be considered for transferring patients submit a request for a standing offer proposal in order to be considered for a standing offer agreement (SOA). Prior to April 1992, air

carriers could submit proposals for an SOA at any time, as well as specific amendments to existing SOAs. However, Ministry staff found themselves constantly reviewing agreements and amendments, and continually updating information systems. Currently, there are two SOA dates for each fiscal year: April 1 (one-year agreement) and October 1 (six-month agreement). The six-month agreement will be phased out so that the process becomes an annual one. Carriers with one-year agreements may apply to the Minister at the six-month period to make amendments to the fees they charge (tariffs), to base locations, or to the number of available aircraft.

When a request for an SOA is submitted, MOH reviews *major concerns* such as performance records, experience level, compliance with the agreement and standards, qualifications of the flight crew, and the existence of cabin medical attendants, training program, heated hangar, licences, insurance, flight safety program, and cockpit voice recorder.

SOA requests are judged on several areas: feasibility and compliance with the specifications and requirements outlined in the various schedules; an obvious understanding of the requirements; and the completeness with which all relevant factors are taken into consideration, including the clarity and degree of detailing the costs of human resources, equipment and supplies that will be involved, and evidence of enterprise. Since carriers must reapply annually for an SOA, their proposals are quickly examined to see if any changes have been made from previous submissions.

A carrier is granted an SOA if the proposal meets the requirements to the satisfaction of Air Ambulance staff. Carriers are not compared; any carrier that wishes to apply and meets the SOA criteria is successful. The process is closed. Companies do not know the tariffs of their competitors.

If a carrier is successful, an audit of the premises and equipment is conducted using a criteria checklist. Unsatisfactory elements are brought to the attention of the carrier for improvement. If changes are made and approved, the carrier is deemed satisfactory.

Successfully obtaining an SOA is analogous to being accepted on a team. Although you are a member of the team and eligible to play, there are no guarantees that you will be asked to play. The Ministry of Health is under no obligation to provide a minimum level of activity to a charter, or to use a charter's services at all.

Twenty-three companies currently have SOAs. They are located throughout the province and provide transport when called. The number of transfers a chartered company conducts varies from as little as 3 percent of total business for some companies to as high as 100 percent for others. Clearly, most chartered aircraft are not used exclusively for patient transfers. Some chartered aircraft, however, currently stationed in Kenora, London, Moosonee, and Ottawa, are exclusively used for patient transfers. This activity is the choice of the chartered carrier.

Contracting for chartered carriers is generally the responsibility of Air Ambulance staff. A certain amount of input into the SOA document for chartered aircraft is sought from

Supply and Services staff. There is one month between the time SOAs are submitted and the signing of agreements. Once an SOA is granted, the carrier is added to the list of suppliers to be called to transfer patients. Aircraft are selected for patient transfers by staff at the Medical Air Transport Centre (see Chapter 5, Dispatch).

Regularly Scheduled Aircraft

Regularly scheduled aircraft transfer patients within Ontario, from another province back to Ontario, and from another country back to Ontario. These aircraft are also used to return patient escorts to their home communities.

COMMITTEE'S OBSERVATIONS AND RECOMMENDATIONS

Dedicated Aircraft

It is the opinion of the Committee that the request for proposal (RFP) process used for the dedicated air ambulance system works well, and would be found accountable if held up to public scrutiny. There seems to be sufficient input from a wide range of individuals into writing the RFP document and evaluating the proposals. The criteria for evaluation and the ranking system are sound. The decision approval process is also politically accountable. The final decision is reviewed at a number of levels, including Fiscal Strategies Branch, the Deputy Minister's Committee, and Management Board of Cabinet.

The Committee recognizes that the air ambulance service is a highly public activity. Committee discussions were held regarding the practice of having a closed bidding process. Consideration was given to whether opening the bidding process would be beneficial in terms of greater public accountability. An open process might eliminate any perception that the process is unfair. However, the Committee recognized that the selection of a dedicated carrier is predicated on a wide range of factors and that an open bidding process works best when price is the determining factor. Furthermore, it was noted that a company might include creative strategies, for which it had proprietary rights, in order to make its proposal more attractive. The Ministry of Health benefits from these creative ideas for service delivery. Making the proposals public might discourage such innovation. For these reasons, the Committee feels that the closed bidding process should continue. Although there is no formal appeal process if an unsuccessful bidder wishes to question the final decision, bidders do have some recourse: they may lodge a complaint with the Ombudsman's Office or may initiate legal proceedings. In fact, the process for helicopter contracting was reviewed by the Ombudsman of Ontario in 1987 following a bidder's complaint. The process stood up to scrutiny.

Chartered Aircraft

It is the opinion of the Committee that the existing standing offer agreement (SOA) process presents a number of fundamental problems for the provision of an effective and efficient air ambulance service. These problems

are experienced by both Air Ambulance staff and the chartered carriers, and they ultimately compromise the safe and timely transfer of patients.

For Air Ambulance staff, the SOA process is cumbersome and inordinately time consuming. The SOA has been revised five times since the initial agreements were first published. The move to limit submissions to twice a year helped ease the workload on staff. Work is also in progress to supply chartered companies with the proposal on diskette so that computerized information can be more easily submitted. Despite such changes, two dozen companies can be expected to submit SOAs at the same time—with only one month between the submission deadline and the signing of agreements. In one month, the proposals must be evaluated and the companies must be inspected. A recent audit identified problems in attempting to accomplish this work in such a short time (see Chapter 6, Standards and Inspections).⁴ This is an annual process. The number of staff is limited, yet the number of requests for SOAs can theoretically be unlimited. Hiring more staff is one way to address this problem. It is the opinion of the Committee, however, that such a solution represents “working more” and not “working wisely.”

For chartered carriers, the SOA is a contentious issue. In the consultations, carriers identified a number of problems. The SOA document is viewed as too lengthy, cumbersome, repetitive, arbitrary, and confusing (regulations included in the SOA are already required by Transport Canada;⁵ it is unclear which items are mandatory and which are optional; and some

of the equipment required seems unnecessary and to have been added in an arbitrary manner). The closed bidding process has resulted in price wars, with some companies cutting back on items that may compromise the safety of their flights. And certain items can be waived, an option that calls into question the validity of the standards. As well, the opinion has been expressed by chartered carriers that it is bad practice to award SOAs to so many suppliers, some of whom may never be called to transfer a patient.

The Committee views this entire situation with concern. The SOA process may be sound in principle, but a process is only as good as the mechanisms that are put in place to support it. Staff are not able to conduct the process properly. As a consequence, situations arise where patient safety may be compromised.

The Committee discussed a number of options regarding the SOA process. One option was to address the problems within the current process. Although the SOA document could be simplified, tariffs disclosed, and equipment requirements reviewed, this option would not address the serious problem of price wars and cutting items at the expense of safety. Nor would it address the continued need for intense participation of staff in reviewing, evaluating, and inspecting a large number of carriers. Carriers would continue to question the integrity of the selection process. For these reasons, this option was regarded as unacceptable.

A second option was to establish a “request for proposal” process similar to the one used in the dedicated system. The Committee is aware that this option is being discussed by Air

⁴ Ontario Ministry of Health, Emergency Health Services Branch. “Air Ambulance Service Audit Report.” February 28, 1993.

⁵ “Standing Offer Agreement No. A.A.S. 006: Charter Air Carrier Transport Service, Fixed and Rotary Wing Aircraft.” The complete document is approximately 200 pages.

Ambulance staff. The change would result in more stability in patient transfer activity, greater quality control, and a reduced need for staff to monitor so many suppliers. Although the Committee supports a fully dedicated system as the ultimate ideal, in its opinion the economic, systemic, and political impact of such a change at this time would outweigh the benefits. The cost implications are not clear, but the Committee suspects that costs would rise substantially. It is recognized that a dedicated system would eliminate detention charges. These are charges paid to chartered carriers when, for reasons for which they are not responsible, they are unable to follow an agreed-to schedule (for example, a detention fee can be charged if an aircraft must wait for a patient). These charges are not paid to dedicated aircraft. Not all chartered carriers charge detention fees; some charge a fee for service, plus fuel charges and selected sundry costs. Those that do bill for detention usually charge a lower fee for service, knowing that they will also be paid for waiting. In 1993, \$1,116,349.49 was paid for detention (about 9 percent of the approximately \$12 million spent on charter aircraft annually). Eliminating detention would not necessarily result in cost savings since chartered carriers would likely increase their fee-for-service price.

In changing to a fully dedicated system, extra expense would be incurred in the form of a fixed price to have aircraft available 24 hours a day. Since charters conduct 72 percent of all patient transfers, quite a number of aircraft would need to be supported. (Five dedicated bases conduct 25 percent of transfers.) As well, large amounts of time, energy, and human resources would have to be expended to make

the change successful. It is the view of the Committee that concentrating these resources into a successful change process in this area would be at the expense of other pressing issues.

A third option, and one that the Committee regards as doable, practical, and more economical, is to develop a system in which charters submit proposals for the right to be the preferred provider to be called to transfer patients out of a region. The characteristics of this model include:

- Regional service areas based on a provincial analysis of patient volume and transfer patterns.
- A request for proposal (RFP) process that provides appropriate data for carriers to make an informed bid (statistics on expected volume of transfers for each region, types of transfers, and so forth).
- A decision process that is value based, encompassing both service and price. (Decisions to award preferred-provider status should take into account the carrier's safety and service records, as well as the nature and extent of proposed innovation.)
- The option for carriers to submit consortium bids. (This option may be preferable in remote areas that depend on a number of smaller operators. The consortium would have to manage its members with the Medical Air Transport Centre, providing only one number to call for each region).
- A requirement that the carrier incorporate back-up provisions.

- A policy that the preferred provider be paid on a fee-for-service basis as well as for fuel and sundry costs.

In exchange for the privilege of being the preferred provider, it is the carrier's responsibility to organize its fleet to meet the demand for service. Flexibility must be built into the overall system in order to allow an efficient and effective operation. For example, if a carrier is dropping off a patient and flying back to the home region, it is economical to take back a patient. One potential strategy might be to allow the preferred provider a percentage of all outgoing non-dedicated charter flights from its region.

Initially, contracts should be for a minimum of two years. This period would provide some stability for the carrier, permitting it to outfit sufficient aircraft to be available to meet the projected volume of patient transfers. A program evaluation should be put into place when this initiative begins and should include a review of factors such as user satisfaction (patients, carriers, the Ministry of Health); appropriateness of the number and size of regions selected; and suitability of the length of contract. This evaluation should be supported with data. A formal schedule of appropriate audits and inspections should be part of the evaluation. The results of the evaluation should be used to refine the preferred-provider system.

Air carriers would have to prepare for this change. A transition period should be put in place to move from the current SOA system to the preferred-provider system. The transition should begin after the data from the external provincial utilization review have been

analysed and should include a staged process, which might be scheduled as follows: developing and announcing the concept (6-month point); advertising the RFP (with data obtained from the utilization review, as noted in Recommendation 2) (12-month point); awarding rights (15-month point); and implementation (18-month point). The timing and the development of these transition stages should be determined in consultation with chartered carriers.

It is the opinion of the Committee that this option will have a positive impact on staff workload; will minimize the serious problem of price wars and cutting items at the expense of safety; and will bring stability to the process of contracting services from chartered companies.

The Committee recommends that:

3. The standing offer agreement for chartered carriers be replaced by a method of contracting which encompasses the premise that selected carriers are awarded rights as the preferred provider of service for a region. This model should be characterized by the establishment of regional service areas; a request for proposal process; selection that is value based; a provision for backup; fee-for-service payment; a preliminary two-year contract period; standardized medical equipment; and a program evaluation to monitor and assess such items as user satisfaction, number and size of regions, and length of contract period. Full implementation of this method of contracting should be within 18 months of the completion of the proposed external provincial review (Recommendation 2).

tion 2). The stages in this transition period should be determined in consultation with chartered carriers.

The Committee recognizes that implementation of this recommendation would have a negative impact on operators whose bids are not successful. This result cannot be avoided. The transition period will enable carriers to assess the ability of their companies to compete; to form consortiums, if necessary; and to put together the resources for their proposals. Operators who are not successful can concentrate their energies on other activities rather than continue under an SOA system and wait for a call that may never come. The purpose of the recommendation is to improve an unacceptable situation and increase the quality of service. This recommendation has a positive impact on a number of other issues examined by the Committee.

Finally, the Committee fully supports management's role to determine directions and make decisions. However, these activities would benefit from user input. Regular discussions with dedicated and chartered carriers on issues of concern and areas for improvement would benefit the air ambulance service. This forum could be used to address a number of the problem areas noted above, such as contracting, equipment, a closed bidding process, and waivers.

The Committee recommends that:

- 4. An air carriers' committee be established, made up of representatives from dedicated and chartered carriers, Transport Canada, the Ministry of Natural Resources, Air Ambulance staff and management, and appropriate health personnel. The committee should meet at least twice a year to raise issues of concern; to discuss areas for improvement; and to suggest changes in the areas of contracting, safety, and standards.**

Regularly Scheduled Aircraft

The Committee is unclear why ambulatory patients who do not need in-flight medical care are transported on regularly scheduled aircraft as part of the air ambulance service. These patients may be more appropriately funded by the Northern Health Travel Grant Program, since they do not need an ambulance to transport them. (For further discussion, see Chapter 8, Other Areas for Review.)

Dispatching for the air ambulance service is the responsibility of the Medical Air Transport Centre (MATC), which is located in Toronto.⁶ Staff at the centre receive requests for air transportation, collect patient information, and arrange an appropriate aircraft to transfer the patient.

Functions Performed in the Medical Air Transport Centre

Three distinct functions are performed in the centre: call taking, flight planning, and flight following. These positions are held by full-time staff and are augmented by government temporary workers (G.O. Temps).

Call Taking

Call taking is performed by the medical air transport analyst (commonly referred to as the call taker). Call takers receive requests for an air ambulance and record patient information. The *Air Ambulance Utilization Guide* contains a partial list of information to be requested by the call taker. This checklist includes patient's diagnosis, age, and sex; approval by physician for air transport; origin and destination of patient; escort and equipment requirements; and escort return requirements. The call taker also probes the caller for appropriate additional information (patient stability, organ viability time, isolation precautions, and so forth).

Once the call taker records the reason for transfer, enters the location and destination of the patient, and determines the code of the patient, a number of paths can be followed, depending on the severity of the patient's condition. If the call is urgent (priority 4), the

caller is put on hold and the short-term flight planner is alerted to begin planning the flight immediately. For all other calls, the information is collected first. Priority 3 callers are then told that someone will call them back shortly with the flight information. Priority 2 and 1 callers are informed that 24 hours' booking notice is required and that someone will call them.

Call takers may contact a physician for guidance when they face difficulties. For example, if two emergency calls come in and only one dedicated aircraft is available, the call taker may contact the base and sending physicians. This four-way communication is referred to as "conferencing." Call takers also set up "patches," which are en-route communications among the on-board paramedic staff and the referring, receiving, and base hospital physicians.

The education of a call taker is successful completion of the Ambulance and Emergency Care (AEC) college program in Ontario and of a basic first-aid course. The call taker must have a restricted radio operator's licence and must have successfully completed an aeromedical evacuation program (also known as the aeromedical transport program). A call taker undergoes three weeks of in-house training when hired.

Flight Planning

Flight planning is performed by the transport controller analyst (commonly called the flight planner). The flight planner selects the most suitable aircraft, based on the information collected by the call taker. The key consideration is the code of the patient. Flight planners are expected to be knowledgeable

⁶ MATC is also referred to as the Central Air Ambulance Communications Centre (CAACC), an old title still used by some in the field; Medical Communications (MedCom), which tends to be the "radio name"; Air Central Dispatch; or the Dispatch Centre.

about the aircraft, the equipment, and the staff on board. Short-term flight planners schedule priority 3 and 4 calls, and long-term flight planners schedule priority 1 and 2 calls.

The flight planner normally selects a *dedicated aircraft* if a patient is coded priority 3 or 4. (A client may also specifically request a dedicated craft for medical reasons.) These transfers are undertaken without delay. If a dedicated aircraft is not available for an emergency, a *chartered aircraft* is used to transfer the critical patient, even though chartered aircraft usually transfer less seriously ill patients. The flight planner also has access to a registry of air carriers that do not have standing offer agreements with the Ministry of Health. These carriers are called if the situation warrants (for example, if a float plane is needed to transfer someone out of a remote area). Such aircraft are not medically equipped, nor are they staffed with trained personnel.

In selecting a chartered aircraft, the flight planner follows an aircraft selection policy/process. The Aerosoft program, introduced in 1991, is used to assist with flight selection for chartered non-emergency flights. Aerosoft includes all air carriers with standing offer agreements and can rank order all available carriers by (1) the time it would take for each to transfer a patient, and (2) the total cost involved in the transfer. After considering relevant variables, the flight planner selects either the aircraft that can provide the lowest out-of-hospital time for emergency calls, or the most economical aircraft that can meet all transport requirements.

The flight planner is required to keep flight and booking notes for all transfers. Flight notes document the predominant circumstances affecting the decision to select a particular carrier (for example, weather, or capacity of air fields). Booking notes document the details concerning carriers that were contacted before the flight was awarded.

When a flight is successfully booked, the flight planner faxes a confirmation report of the agreement to the carrier, coordinates any land ambulance connections, and confirms the arrangements with the caller who requested the transfer (the client). The client is informed verbally of the details of the flight (type of aircraft, time of arrival, staff and equipment on board, land ambulance connections). It is the client's responsibility to notify the receiving hospital about transfer arrangements and delays.

The education of a flight planner includes in-depth aviation experience as a pilot or equivalent, and involves three weeks of in-house training.

Flight Following

Flight following is performed by the flight controller (commonly called the flight follower). Flight followers keep track of the schedules and paths of all aircraft conducting patient transfers. If a carrier is delayed, it is the carrier's responsibility to contact the flight follower using a 1-800 number. Currently, anyone in the Medical Air Transport Centre may answer this line. The flight follower must call the sending facility and land ambulance to

inform them of the delay. If a flight is cancelled, the flight follower verbally informs the flight planner to begin planning another flight.

At present, there are four flight followers, all of whom previously worked as flight planners and successfully completed a flight dispatch training course sponsored by Air Canada. Flight followers must have in-depth aviation knowledge. Once hired, a flight follower undergoes a three-week in-house training period.

Calling for Service

An aircraft cannot be dispatched unless MATC first receives a request. Five telephone numbers and one fax number are available.

Three exceptions exist. First, for emergency “scene calls” in certain locations, a dedicated aircraft may be dispatched directly from its base to the scene of an accident. Second, in Sudbury the local MOH land central ambulance communication centre (CACC) can assign a helicopter to pick up an emergency patient from the Sudbury airport for transfer to a hospital downtown. Third, a modified interfacility program operates in Bancroft and Smiths Falls. If the patient’s condition warrants an air ambulance transfer from a small to a large facility, the land ambulance can pre-alert the standing offer helicopter to go to the small hospital to meet the land ambulance when it arrives with the patient.

Callers must be associated with either a hospital or a land ambulance centre/service.

Callers originating from *hospitals* have included physicians, nurses, respiratory therapists, admitting and discharge planners, social workers, and administrative staff, among many others. Assigning a caller is a function of hospital policy. In some hospitals, the person most responsible for the patient’s care requests the transfer. In other hospitals, one central person or function is responsible for all requests for air transfers.

Calls originating from *ambulance centres/services* relay requests received directly from hospitals or health care providers. Any land ambulance centre/service may contact MATC. One problem with this practice is that the call taker often receives insufficient information and must then contact the sending hospital for clarification. Information needed for a land transfer is quite different from that required for an air transfer. As well, discussions about alternative aircraft may be necessary. If the sending hospital is called for further information, then it is usually regarded as the client. If further information is not needed, the ambulance centre/service is usually regarded as the client. Some ambulance centres/services insist that MATC call the hospital and deal with it directly.

COMMITTEE'S OBSERVATIONS AND RECOMMENDATIONS

Functions Performed in the Medical Air Transport Centre

Call Taking

It is the view of the Committee that the call taker plays a critical role in the Medical Air Transport Centre. The call taker is the point of first contact for callers and begins the chain of events that will—or will not—result in an appropriate and safe patient transfer. It is the call taker's responsibility to assign a priority code to a patient.

The consultations and submissions identified a number of concerns about the call taker's function. The perception exists among health care providers that call takers ask for too much medical information and question the need for an air ambulance, and that their level of understanding of medical terms and medical equipment is insufficient.

It is the view of the Committee that both the caller's and the call taker's common purpose is to transfer the patient. Problems occur when there are differences in opinion on how this objective should be accomplished. These problems seem to fall into three areas: information requested, education, and transfer arrangements.

In terms of information requested, the Committee questions whether the details the call taker asks for are appropriate and necessary to make decisions about a transfer. Recognizing that much of the probing is an attempt to determine the priority code of the

patient, the Committee feels that several fundamental questions must be examined. What is the call taker's purpose? Does the requested information meet the call taker's purpose? Who should be determining the code of the patient? Are the code definitions appropriate to the air ambulance function? (A number of these issues are discussed in Chapter 7, Patient Care and Quality Assurance.)

The Committee is aware that work is being done internally to establish a system of algorithms to assist the call taker with information collection and decision making. Once the type of transfer is determined, the call taker will follow a predetermined path of questions to obtain necessary information. It is hoped that these algorithms will streamline the information collection process as well as standardize the medical information being sought. The data elements in these algorithms were devised internally through an assessment of current practice and experience, and a review of investigations and incident reports over the past five years.

The Committee supports attempts to assist the call taker, but believes this initiative does not address the fundamental issues noted above. Failure to address these issues has resulted in a sometimes antagonistic dynamic between call takers and callers. The Committee heard frequent complaints about callers assumed to be abusers of the system and unwilling to give needed information; and about call takers assumed to be uncooperative, to lack sufficient training, and to be asking for information that was irrelevant to the transfer.

All users of the service need to be educated about it. Mechanisms and strategies must be put in place to ensure that the service is being requested appropriately, that callers know what questions they will be asked, and that policies (and their rationales) are clearly communicated and understood. (This issue is addressed in Chapter 9, Conclusion—Critical Success Factors.) When these mechanisms and strategies are not in place, it is the call taker who bears the brunt of the criticism.

In terms of education, the call taker needs to have sufficient training and experience to ask effectively for appropriate information and to understand the impact of this information on conducting a safe patient transfer. The call taker communicates with a wide range of individuals under fairly stressful circumstances. The Committee has concerns that the call taker does not have sufficient health care training for the roles expected of the position. In difficult situations, the call taker can get assistance in decision making from the medical consultant at the Emergency Health Services Branch and from base physicians, or can set up conference calls with key players. However, the consultations indicated that this assistance is rarely requested.

The Committee views with concern any situation where two critical cases must be transferred and the call taker makes the decision without obtaining medical input. The Committee is aware that in some of these situations, call takers have had to wait as long as 25 minutes for physician input. This delay is

clearly unacceptable and points to the need to educate physicians on the seriousness of these calls.

It is the opinion of the Committee that the decision about the severity of a patient's condition must be separated from decisions regarding resource availability and transfer arrangements. These latter decisions fall in the realm of the Medical Air Transport Centre. The decision about patient severity does not.

The Committee recommends that:

5. **It be the responsibility of the sending physician, or of his or her delegate, to determine the severity of the patient's condition.**
6. **Consultation with appropriate physicians (sending, receiving, base, Emergency Health Services Branch medical consultant) should take place in every instance where there is conflict related to which one of two critically ill patients needs to be moved first.**

In terms of transfer arrangements, consultations with health care providers identified a number of perceived problems. These included the need to give 24 hours' notice and meet a 3 p.m. deadline to schedule non-emergency flights, and being put "on hold" for long periods when calling. Although the Committee will not comment on these specific instances, it observed that few formal avenues exist for addressing call takers' and callers' concerns. These concerns may be individual ones or policy issues. (This matter is addressed by Recommendation 28 in Chapter 9.)

Flight Planning

The consultations and submissions raised a number of concerns that relate directly to the role of the flight planner. These issues can be grouped into three areas: delays, transfer details, and decision making.

Concerns with delays were mentioned by health care providers, by consumers, and by Air Ambulance staff. The Committee heard of situations where callers were put on hold for long periods before flight availability was confirmed. As well, some callers waited extensively after a promise that a carrier would be available "soon," when they could have made other arrangements. Flight planners were also inconvenienced by carriers who did not respond accurately to calls about aircraft availability. Carriers might agree to take on a flight, even though they did not have an aircraft readily available, because they wanted the business and were afraid they would acquire a reputation for not being available when called.

Protocols for dealing with delays must be established and followed. These protocols would include one for putting callers on hold and another for informing callers of aircraft unavailability so that other arrangements could be made. It is the opinion of the Committee that the problems with chartered carriers would be minimized, if not eliminated, through a number of recommendations contained in this report. For example, a carrier would run the risk of losing preferred rights if these problems continue.

The consultations and submissions identified problems involving transfer details. Some examples include: not knowing what staff and equipment are on board the aircraft; expecting certain staff and equipment and receiving other staff and equipment; escorts being surprised when additional stops are made en route; and escorts being stranded at the end of a transfer.

Flight arrangements are verbally transmitted to the sending facility. It is the opinion of the Committee that this verbal communication leads to the loss of information. Simply faxing details of the transfer (such as aircraft, staff, and equipment) to the sending facility would be a first step, although efforts must be made to take advantage of computer networks and other advances in telecommunications.

It is the opinion of the Committee that no routine mechanisms exist for gathering input on unsatisfactory outcomes. In addition, there does not seem to be a regular system of auditing and analysing complaints and concerns about the service. Attempts were made to review complaint files. (A summary of complaints appears as Appendix F.) Although specific staff are responsible for addressing complaints pertinent to their areas, no central source or mechanism exists that provides an overview of the magnitude or the nature of the complaints. Neither is there any mechanism by which to gauge user satisfaction with the service. Users include patients, health care providers, hospitals, and carriers. If the Ministry of Health is in the business of providing a service, it must take responsibility for making sure its users are satisfied.

In terms of decision making, the selection of aircraft has come under considerable criticism. Dedicated aircraft are being used not only for critical cases, but also for priority 1 and 2 patients. Concerns were raised that patients have been coded 3 or 4, when in reality they were a code 1 or 2, making dedicated aircraft unavailable when emergencies arise (see Chapter 3, Organization of the Service). There is also widespread distrust of the method of selecting chartered aircraft for patient transfers. A recent audit reviewed certain aspects of the selection of charter flights and found that the air ambulance service could not substantiate the objectivity of its aircraft selection.⁷ Aircraft comparison schedules had been discarded, and staff consistently had not recorded flight notes and booking notes. The reasons given were staff shortages and lack of time. This lack of objective data leaves flight planners open to criticism from air carriers.

The selection process has led to hostility and mistrust between the air ambulance service and chartered carriers. It is the opinion of the Committee that the recommendation to establish a preferred-provider system would eliminate most if not all of the problems associated with aircraft selection. This system should also decrease the amount of paperwork required of the flight planner. An appropriate balance must be struck between being held accountable and not compromising public safety by inundating staff with record-keeping tasks. The Committee is also of the opinion that the recommendation to establish an air carriers' committee (Recommendation 4) represents a positive step towards improving professional relationships.

Establishing a preferred-provider system would have a significant impact on the range of the flight planner's decisions. Rather than selecting the most appropriate aircraft out of a list of dozens, flight planners would call the one preferred provider for a region. That provider would have planned how best to serve the patient and the regional communities. Attention would have to be directed to the flight planner's duties as well as to determining the most appropriate education and training.

Flight Following

One concern directly related to the role of the flight follower involves aircraft delay or cancellation. Currently, flight followers have the technology to track flights based on estimated time of departure and arrival. If an aircraft is late or must cancel, it is the responsibility of the carrier to contact the flight follower. When delays occur in conveying information to the sending hospital, it is unclear how much of the problem lies with the carrier and how much with the flight follower. Further, is the delay created because the flight follower has not been told that a carrier has called, or because the flight follower is lax in calling the affected parties?

It is the opinion of the Committee that the recommendation to implement a preferred-provider system (Recommendation 3) would address the problem of charter delays. As for delays because the flight follower does not receive information once a call has come into MATC, these should be solved with a direct line to the flight follower (to be implemented in the new MATC location, opening in 1994). The

⁷ Ontario Ministry of Health, Emergency Health Services Branch. "Air Ambulance Service Audit Report." February 28, 1993.

flight follower will continue to contact all affected parties as quickly as possible. A copy of this additional information should be faxed so that it can be attached to the original document received by the sending facility.

The flight follower positions are held by individuals who have a great deal of experience and seniority. The Committee has observed that these individuals tend to provide a certain degree of quality control for the work performed by the other two positions (the call taker and the flight planner). This role results from experience, rather than being a recognized duty of the position. Establishing a preferred-provider system would have an impact on this position.

Staff and Service

Staff

The Committee discussed the feasibility of cross-training staff to perform more than one function in the Medical Air Transport Centre (MATC). It was noted that turnover in MATC is not high. The ability to secure and maintain such highly qualified staff (with aviation training) seems to be the result of a downturn in the economy generally and the aviation industry specifically. Training has increased, staff have been upgraded, and salaries have increased since the Aerodevco report.⁸ Feedback from interviews was mixed regarding the adequacy of the staffing complement.

The Committee cannot recommend that more staff be added to MATC since such a recommendation would be based on the current activities and structure of the Air

Ambulance Section. A number of recommendations in the report could have an impact on the functions performed in MATC. Staff must be prepared to meet change.

The Committee recommends that:

7. **In response to the changes proposed in Recommendation 3 (preferred provider) and Recommendation 5 (severity of patient), an external review be conducted of the positions in the Medical Air Transport Centre. This review should evaluate the purpose, roles, responsibilities, training, and daily activities of staff. Front-line staff should be supported with additional training, where necessary, in order to operate more effectively and efficiently.**

The Committee views with great concern the use of government temporary workers (G.O. Temps) in the centre. These individuals may lack the training and experience necessary to deal with the demands of the positions. This situation adds stress to the full-time staff, who are compelled to "watch out" for the quality of work carried out by the temps. As a result, the probability of inappropriate decisions increases. The safety of patient transfers may be compromised, along with the effectiveness and efficiency of the service. The role of G.O. Temps should be considered as part of the recommended staff review.

With regard to complaints about the service, wide-ranging issues of concern were raised in both the consultations and the submissions. These concerns include specific complaints as well as those regarding policy and procedure. The Committee quickly recognized that no formal mechanisms are available to identify

⁸ Aerodevco Consultants Ltd. "Review of the Ontario Ministry of Health Emergency Health Services Air Ambulance Service." August 21, 1989.

and deal responsibly with issues and concerns raised by MATC staff and callers. There seems to be little follow-up to problem situations. In other words, neither staff nor callers are held accountable for their actions. (This point is discussed further in Chapter 9, Conclusion—Critical Success Factors.) Routine mechanisms for gathering input on unsatisfactory outcomes are not in place, nor is there a regular system of auditing and analysing complaints and concerns about the service. Consequently, an accurate picture of the magnitude, nature, and trends of complaints and issues does not exist. (This concern is addressed by Recommendation 28.)

Calling for Service

It is the opinion of the Committee that each hospital should continue to determine its internal policy on requesting air ambulance transfers. It must be made clear to hospitals, however, that the caller has certain responsibilities when he or she performs this function.

Ambulance centres/services play a middle-person role, since they relay information from the person requesting the service to the person supplying it. The difficulty arises when insufficient information is collected or a patient's condition is defined in the language of the land ambulance, which may be different from air ambulance language. It is roughly estimated that 35 percent of calls originate directly from ambulance centres/services. (This figure may be higher, since some ambulance services are managed by and located in hospitals.) The Committee believes that this issue needs to be examined objectively by

representatives of both air and land ambulance services. Turf issues should be put aside, and discussions should concentrate on creating a more effective system. If the decision is to continue accepting calls from land ambulance centres/services, a decision must be made on the role land will play. Will it be to assess the call and transfer it immediately, or to collect the information that air is likely to require? Similarly, a communications strategy to hospitals and other health care providers must be developed if the decision is made to encourage direct calling to the Medical Air Transport Centre. (For a discussion of this issue, see Chapter 8, Other Areas for Review.)

Centralized Dispatch

Of all the issues raised in the consultations and submissions, the activities of the Medical Air Transport Centre (MATC) were identified most often as causing problems. Many of the specific items have been addressed above. There was one overriding issue, however: centralized dispatch. The perception exists that MATC staff, located in Toronto, do not understand regional issues, and that they appear to lack sufficient knowledge about geography, time zones, weather, distances, available resources (that there may be no runways, land ambulances, physicians, nurses), local conditions (a lack of awareness for example, that an aircraft is on the local runway), and language differences (especially in the Aboriginal communities). All of this has had a negative impact on the effectiveness of the service.

The Committee discussed the possibility of a decentralized dispatch system. Dispatch centres could be established in the north-east and north-west to arrange transfers within these regions. Transfers across regions and to the south would go through central dispatch. However, it was the conclusion of the Committee that such a change would be costly and financially unacceptable in these times of economic constraint. Furthermore, it was concluded that decentralization might create more problems than it would solve. No one would have a provincial overview of the availability of aircraft at any point in time; wherever dispatches were located, there would always be a certain lack of knowledge about local conditions elsewhere. (Not surprisingly, many people who favoured decentralization wanted a dispatch located in their community.)

The Committee reaffirms support for the centralized dispatch system. At the same time, it views the volume of complaints about MATC as indicative of problems that need to be addressed seriously and expeditiously.

The Air Ambulance Section must ensure that a centralized system provides good service by instituting practices that will address problem areas. Examples include:

- Educating dispatchers about regional geography, local conditions, and community needs through such mechanisms as in-service training, tours of remote areas, and “ride-alongs” with a carrier transferring a patient.

- Exploring the feasibility of having a form of “decentralization” in MATC, where staff with regional knowledge take responsibility for transfers in these regions.
- Hiring new staff who have field experience.
- Supporting the preceptorship program being instituted in MATC. (This program matches new employees with a senior person.)

Along with improving centralized dispatch, there must be a review of the consistency of dispatch policies. The Committee recognizes that certain policies seem to be arbitrarily applied to different parts of the province. This issue was raised in the consultations. Examples include allowing two exceptions to the practice of direct calling to MATC for on-scene calls, and having a modified interfacility transfer program in one site only. It is the view of the Committee that if policy flexibility and special programs result in positive outcomes, these should be enjoyed by the whole province. Giving what has been perceived as “favours” to certain areas has resulted in disgruntlement and in complaints of unfair practices.

Chapter 6

Standards and Inspections — Aviation Quality Control

Standards

Standards for air ambulance carriers are established by Transport Canada (TC), the Ministry of Health (MOH), and the Ministry of Natural Resources (MNR).

Transport Canada is the regulatory body that determines whether an air carrier is safely equipped to conduct a commercial operation. It focuses on the carrier's operations and airworthiness rather than on what the carrier is transporting. When a carrier meets TC's requirements for personnel and facilities, an operating certificate is granted. The carrier can then apply to the National Transportation Agency for a domestic licence.

Transport Canada offers voluntary safety programs such as the Pilot Decision Making Program and will review operations to point out problem areas. Although these programs are free, carriers tend not to take advantage of the operations review since the civil aviation investigator conducting the program is required to report problem areas.

Since Transport Canada does not recognize air ambulance as a specialty operation, there are no TC standards for the patient transfer activity. TC sets standards from an airworthiness perspective for items that are fixed to the aircraft. Medical equipment is examined not for medical appropriateness, but for whether it will remain "fixed" while the aircraft is in flight.

The Ministry of Health requires carriers to comply with all Transport Canada regulations and with the Government of Ontario's *The Standards*.⁹ These guidelines were originally developed by the Ministry of Natural Resources, which operates a fleet of aircraft and offers aviation expertise. *The Standards* define the minimum safety and other standards acceptable for use by the Government of Ontario for aircraft, pilots, and engineers in the commercial aviation sector, and they establish criteria that may duplicate or exceed the federal government's mandatory aviation regulations for the purpose of passenger carriage. Some of the MOH's aircraft carrier standards are more stringent than Transport Canada's requirements and even more stringent than those set out in *The Standards*.

The Ministry of Health's standards focusing on the transport of patients, medical equipment, and escorts are stipulated in the standing offer agreement for charter operators and in the contract for dedicated operators (see Chapter 4, Aircraft Contracting, and Chapter 7, Patient Care and Quality Assurance). The Ministry permits waivers in certain circumstances, although a list of the items that can be waived is not released. Air crew qualifications are waived on a case-by-case basis, on the premise that the situation is temporary and the crew will fly under restricted conditions only. Other waivers include allowing operation of an aircraft not stored in a hangar (in a remote Northern community) and using someone as a

⁹ Government of Ontario, Ministry of Natural Resources. *The Standards and Requirements for Ontario Ministry of Natural Resources Approved Commercial Air Carriers*, 1992; Revision no. 1, effective May 1, 1993.

cabin medical attendant who does not have the necessary qualifications (also in a remote Northern community).

Audits and Inspections¹⁰

Transport Canada (TC) conducts inspections to ensure that a carrier meets the standards specified in its operating certificate. TC tries to inspect large carriers annually, while small carriers may be inspected once every three years.¹¹ Since carriers are informed of when an inspection will occur, there is no element of surprise. TC also conducts random spot checks (or ramp checks).

The Ministry of Health conducts an audit of premises and equipment when a carrier is awarded a contract or a standing offer agreement (SOA). Dedicated carriers with five-year contracts are audited annually, as is each air ambulance base. Chartered carriers are supposed to be audited before being granted an SOA. Attempts are made to visit the carrier's base once a year, but usually checks take place when most convenient. For example, inspection staff find out from the Medical Air Transport Centre when a carrier will be coming to the Toronto Island Airport, and then a ramp check is performed.

Audits of air carriers are conducted by Air Ambulance staff. Transport Canada is informed of any regulatory infractions. An MNR-licensed aircraft engineer may become involved if engineering concerns are discovered during the audit.

The Ministry of Health also conducts random spot-check inspections during the term of a contract or agreement. These inspections are not routinely scheduled, but occur when MOH staff become aware of an incident or a complaint about a carrier, or when a carrier and an inspector happen to be at an airport at the same time (which may or may not be planned). Depending on the extent of the problem, a carrier may receive a verbal warning or a warning letter from the manager of Air Ambulance, or the inspector may immediately suspend it from service. The action taken depends on which items are unsatisfactory.

Inspections are also performed by Air Ambulance staff and by MNR staff. (An agreement between the two ministries divides the province for the purposes of inspections.) The result of an inspection is usually shared only if it uncovers difficulties. The five base managers also conduct some spot inspections on chartered air carriers. As well, MOH inspects heliports annually. These inspections are mainly carried out by the base managers and occasionally by Air Ambulance staff.

In addition to carrying out its audit and inspection activities, MOH requires air ambulance carriers to have an active flight safety and accident response program. Each organization must also have a designated flight safety officer to manage the program. Regular meetings of aircraft company representatives, including pilots and medical attendants, must be held at least twice annually. Minutes of these meetings must be forwarded to MOH

¹⁰ Transport Canada and the Ministry of Natural Resources do not make a distinction between an "audit" and an "inspection," but the Ministry of Health does differentiate them. MOH regards an "audit" as an intensive examination, usually conducted annually, of a carrier's facility, offices, equipment, and records. An "inspection" is a fairly cursory spot check of a carrier, usually conducted on an ad hoc basis.

¹¹ A large carrier is one that weighs 12,500 pounds or more. A small carrier weighs less than 12,500 pounds.

within two weeks. Incident reports must also be submitted to MOH as part of a flight safety occurrence-reporting system.

COMMITTEE'S OBSERVATIONS AND RECOMMENDATIONS

One of the Review's Terms of Reference was to examine safety records from 1981 to 1992 (see Appendix G). During this time, there were nine air ambulance accidents in Ontario, which resulted in four fatalities and three occurrences of serious injury. According to the statistics, the Ontario Air Ambulance has a good safety record.

Standards

It is the opinion of the Committee that the role Transport Canada plays as a regulatory agency, overseeing standards and technical details of operations, is reasonable. The Ministry of Natural Resources also plays an appropriate role in establishing standards, since it operates a fleet of aircraft and provides aviation expertise.

The Committee does have concerns about the role the Ministry of Health plays in establishing and monitoring standards for air carriers. It is appropriate for MOH to establish and monitor standards for patient transfer activities, since the Ministry is responsible for the safe transfer of patients. The Committee's concerns focus on the purpose of the standards and the process of how they are established. (See also Chapter 9, Conclusion—Critical Success Factors.)

The purpose of standards is to ensure aviation quality control. In its contracts and agreements, MOH includes standards that are already required by Transport Canada (passenger requirements, passenger briefings, proper weight and balance, and so forth). It is the opinion of the Committee that this practice results in contracts and agreements that are filled with duplications, are more complex than they need to be, and are unnecessarily annoying to suppliers. It also carries an implicit message that carriers are not professional enough either to know or to follow TC requirements. The Committee was made aware of instances where certain MOH standards led to confusion in interpretation, especially where the standards were contrary to Transport Canada's.

A lack of rational strategic planning appears to exist in the area of setting standards. Consultations uncovered the perception that some standards are inappropriate. It is true that certain standards have been added in response to public inquests and reviews rather than from solid discussions on what is required for safe patient transfers. These types of discussions must take place. It would be useful to begin from a zero-based perspective, from which standards, equipment, and other requirements would be reviewed and assessed in terms of being reasonable, necessary, and beneficial for effective and safe patient transfers. The final list of standards should be logical and defensible under public scrutiny.

It is the Committee's opinion that the recommendation to establish a preferred-provider system (Recommendation 3) should be used as an opportunity to standardize the

aircraft and equipment that are acceptable for patient transfers. Currently, the standards set out minimum requirements. In an attempt to be selected for a transfer, some charters equip their aircraft with more than the minimum. This practice has led to the perception that some aircraft are better equipped than others, and that the quality of the service varies according to the carrier. The Committee heard about confusion among health care providers who are unsure of what equipment will be on the aircraft.

The Committee is concerned about the practice of waiving standards in certain circumstances. Standards represent the conditions of doing business, and they need to be practical and enforceable. Waivers are appropriate in selected circumstances; however, when waivers are routinely allowed, it sends the message that standards are not being upheld. If certain standards are routinely waived, they should be re-evaluated and a decision made on whether the standard should be changed to reflect what is actually happening. Where waivers are granted, this information should be communicated to carriers, with the rationale for the decision.

The Committee recommends that:

- 8. Standards, equipment, and other requirements be routinely reviewed and assessed by the proposed air carriers' committee (Recommendation 4) in terms of being reasonable, necessary, and beneficial for effective and safe patient transfers. The outcome of these reviews should be defensible under public scrutiny.**

Audits and Inspections

The Ministry's inspection process for dedicated carriers seems to be thorough, but the process for SOA carriers is a problem. A recent audit found that the inspection process for SOA carriers was considerably less formal than it should have been.¹² The procedure and frequency for carrying out inspections were unclear; inspection reports were not in all the SOA files; inspections were not necessarily carried out before signing; previous inspections were used to exempt some carriers from current inspections (with no evidence of justification for these exemptions); and many SOAs were not signed until as late as August 1992, even though the tentative acceptance letters were sent out by April 15, 1992. To the Committee's knowledge, this situation has not improved significantly.

A systematic schedule or central record of inspections (ramp checks) does not exist. Under the current system, it is conceivable that some carriers could be inspected frequently and others not at all. The Ministry of Natural Resources informs the Ministry of Health of the inspections it conducts only if difficulties exist. In November 1993, the Air Ambulance Section asked MNR to forward a report of completed inspections. The Committee approves of this activity, but believes it should be part of an overall operations plan to conduct systematic audits and inspections.

The consultations pointed to the perception that there is inconsistent treatment when aircraft infractions are discovered. Anecdotes were relayed of some carriers being grounded for an infraction while others received a verbal

¹² Ontario Ministry of Health, Emergency Health Services Branch. "Air Ambulance Service Audit Report." February 28, 1993.

warning. To the Committee's knowledge, there are no guidelines available or communicated that state the consequences of not upholding various standards, nor is there an appeal process. Inspectors' responses seem to be personal ones that may not be based on training or established standards.

Standardizing and communicating potential repercussions must be included as part of the operations plan for audits and inspections.

The Committee recommends that:

- 9. An operations plan to conduct systematic audits and inspections be established. As part of this plan, procedures should be clearly stipulated regarding safety management; aircraft and heliport audits and inspections; the roles of the Ministry of Health, Transport Canada, and the Ministry of Natural Resources; communication among these parties; training for audits and inspections; monitoring of incidents; and the standardizing of a list of infractions and their consequences. These procedures should be communicated to all carriers and to others, as appropriate.**

The Committee has observed that the level of mutual trust and respect between the air ambulance service and the air carriers is low. This relationship does not contribute to a working environment that emphasizes high-quality aviation practices for the sake of safe and efficient patient transfers. Everyone must take responsibility for providing a professional and safe service. Currently, carriers are required to have safety committees that meet twice yearly, documenting concerns and sending the minutes to the Ministry of Health. These meetings are not taking place, nor is the

practice being monitored as rigorously as it needs to be. It is the opinion of the Committee that the proposed air carriers' committee (Recommendation 4) would help to build more trusting relationships. Joint meetings with carriers and staff should review incidents, share problems, and discuss issues of concern. In addition, the recommendation to establish a preferred-provider system (Recommendation 3) would make the workload of inspections staff more manageable.

This chapter examines the health care component of the air ambulance service. It presents the Committee's deliberations on the roles of each type of air escort, on the medical equipment that aircraft are required to carry, on the roles and responsibilities of various players during a patient transfer, and on the specific mechanisms that exist for quality assurance.

Air Escorts

A range of air escorts is available to provide care during a patient transfer. These escorts differ by education and scope of responsibility. Who is selected depends on the type of air carrier called to do the transfer and on the severity of the patient's condition.

Air Ambulance Officer/Air Ambulance Attendant

The air ambulance officer/air ambulance attendant, an employee of the Ministry of Health (MOH), escorts patients on dedicated aircraft. There are two levels of air ambulance officers/attendants: advanced life support (ALS) and basic life support (BLS). The ALS attendant is more highly skilled than the BLS attendant and is given the distinct title of air ambulance paramedic.

The training to become a BLS air ambulance officer/attendant includes a number of courses offered through several community colleges, most notably Seneca College of Applied Arts and Technology. Once students complete their training, they can apply for BLS positions available in the Air Ambulance Section.

To become an air ALS attendant, applicants first need BLS training and additional training, as required by the Provincial Air Ambulance

Utilization Committee. Applications are made to the Ministry of Health, and candidates are selected through a standard hiring process. The training course, the Aeromedical Advanced Life Support Training Program, is paid for by the Ministry. Designed and taught by individuals active in the air ambulance field, the program includes seven to nine weeks of classroom study (referred to as didactic training) at a selected location; nine weeks of clinical training, generally at the base hospital; and six months of preceptorship. Air ALS attendants undergo 96 hours of continuous medical education each year. The air ALS attendant is authorized to perform delegated medical acts under the authority of his or her hospital physician.

In addition to providing services on the dedicated aircraft, the air ALS attendant usually escorts the patient between the hospital and the aircraft. Ideally, dedicated aircraft are staffed with two ALS attendants for every patient transfer. Recruitment and retention problems have resulted in staff shortages. As a consequence, dedicated aircraft have flown with various combinations of attendants, including: a single ALS attendant, ALS attendants working overtime, one ALS and one BLS attendant, two BLS attendants, and part-time ALS and BLS air ambulance attendants. The Medical Air Transport Centre advises the sending facility if the crew does not include two ALS attendants.

Cabin Medical Attendant

The cabin medical attendant (CMA) escorts patients on chartered aircraft. One CMA is required to be on every flight. The CMA can be

a trained emergency medical care assistant, a registered nurse (RN), or a registered respiratory therapist (RRT), all of them having additional Ministry- and Transport Canada-approved courses. The CMA is considered to be a member of the charter air crew and provides basic life support care. The CMA's role is similar to that of a cabin attendant on a commercial airline. It is not his or her responsibility to escort the patient between the hospital and the aircraft.

According to a draft policy of the Emergency Health Services Branch, if a CMA is a registered nurse or a registered respiratory therapist, the sending physician may choose to use him or her instead of sending a hospital escort. (The CMA may pre-arrange to leave the aircraft and escort the patient between the airport and the facility.) On flights involving multiple patients and/or multiple locations, this CMA cannot play such a dual role. A medical escort, if required, must be provided by the hospital.

Hospital Escorts

It is the responsibility of the referring physician to determine whether additional hospital personnel are needed to accompany a patient on the air carrier. This situation would occur if a physician felt that the skills of the escort were not sufficient for the needs of the patient. Situations also occur where hospital escorts continue to stay with patients at the receiving hospital. Air ALS attendants cannot be depended upon to take on this role because they must be available for critical transfers.

The training of hospital escorts will vary according to who is sent to accompany the patient. The escort may be a physician, a nurse, a respiratory therapist, a nursing assistant, or some other professional. There are no standards or guidelines on who should accompany the patient. The choice is left to individual hospital policy and the discretion of the physician. Because there is no approved or recommended training program, a hospital air escort may not have been trained to provide medical care aboard an aircraft.

Non-medical Escorts

A non-medical escort may accompany a patient under the order of the sending physician. The role of the non-medical escort, who may in fact be a family member, seems to be to provide psycho-social support. Non-medical escorts may accompany patients on both dedicated and chartered air carriers. If the attending physician considers it necessary for the patient to be accompanied by a non-medical escort, the cost of the escort's air fare may be covered when he or she travels with the patient.

Medical Equipment

Dedicated aircraft are equipped with special medical equipment necessary for the type of activities air ALS attendants perform. Special communications and survival equipment are also on board. Similarly, chartered aircraft carry standardized equipment and supplies in keeping with the activities performed by escorts trained in basic life support. This equipment is specified in the standing offer

agreement. The sending hospital is responsible for providing any specialized equipment required for the care of the patient.

Process of Transferring a Patient: Roles and Responsibilities

The process of transferring a patient involves a number of players and activities. Personnel at the sending hospital, the receiving hospital, and sometimes the base hospital are involved in making the transfer successful. The Medical Air Transport Centre arranges for the air carrier to conduct the actual transfer.

Generally, the physician at the sending hospital performs or delegates the following tasks: stabilizing the patient; determining that a transfer is necessary; making the arrangements; preparing the patient for transfer; and contacting the base hospital physician or associate base hospital physician for any necessary information. (Making arrangements includes obtaining informed consent from the patient or family; contacting the receiving facility and physician; contacting the Medical Air Transport Centre; discussing with the receiving physician who will be responsible for the patient en route; determining the appropriate escort, medical equipment, and supplies; and preparing medical documentation to accompany the patient.)

The sending hospital is required to provide a hospital escort, if necessary, as well as specialized medical equipment that may be needed. It is also the responsibility of the sending hospital to contact the receiving

hospital with details of the patient transfer once these have been communicated by the Medical Air Transport Centre.

Generally, it is the physician at the receiving hospital who performs or delegates the following tasks: deciding whether to accept the patient; confirming the availability of needed resources in the receiving hospital; obtaining patient information and providing advice for stabilization and preparation of the patient; determining, with the sending physician, the urgency of the transfer, the escorts required, the necessary medical equipment, and so forth; whenever possible, remaining available for consultation until the patient arrives; and contacting the base hospital physician (or associate) for any necessary information.

Each dedicated air ambulance base is connected with a base hospital. The hospital is designated by the Ministry of Health to offer leadership and medical direction in the provision of pre-hospital and inter-hospital emergency health services in a specified geographic area. Each base hospital signs a contract with the Ministry and is required to provide certain basic and advanced life support services, including continuing medical education, quality assurance programs, patient outcome reviews, and medical advice and consultations. Other stipulations involve procedures for maintaining base hospital records and documentation.

Generally, the base hospital physician or associate base hospital physician assists in the overall coordination of the transfer; advises the Medical Air Transport Centre of the nearest appropriate receiving hospital if one has not been established; provides assistance to

dispatch to rank simultaneous emergency calls or determine aircraft, if requested; assumes primary responsibility for patient care en route if a patient is transported by dedicated aircraft and a medical escort or critical care transfer team has not been provided; redirects a dedicated air ambulance (with the agreement of the pilot) to another facility, if necessary; and provides advice to sending physicians on air transfers and on the responsibilities for patient care en route.

Base hospital activities focus on the dedicated air ambulance system. Transfers carried out by the chartered or scheduled air carriers are not reviewed, nor are they part of quality assurance programs at the base hospital.

Who Is Responsible for the Patient on the Aircraft?

The sending physician must contact the receiving physician to discuss which physician will be responsible for the patient en route. Depending on the circumstances, the responsibility may fall on the sending, receiving, base hospital, or associate base hospital physician.

On dedicated aircraft, air ALS attendants can provide specialized medical care under the direction of the base hospital physician and, if the patient requires emergency ALS interventions, can perform delegated medical acts as authorized by the base doctor. Once a delegated medical act is performed, the air ALS attendant must contact the base physician as soon as possible.

After the completion of an air ambulance transfer, any problems or concerns regarding medical care should be referred to base hospital staff. If the patient was transferred on a chartered aircraft, similar concerns should be referred to Air Ambulance program staff and/or the Medical Air Transport Centre.

Quality Assurance Processes

Forms Used

Standardized forms are used to assist sending hospitals in arranging for a patient transfer. These forms include a "Routine Transfer Form" for diagnostic testing and non-emergency transfers, and an "Emergency Transfer Form" for emergency transfers. These forms are not included in the *Air Ambulance Utilization Guide*, perhaps because they are viewed as internal facility documents rather than transfer documents. These forms seem to be routinely used by all hospitals.

An air ambulance call report is used to record patient and flight information. This Emergency Health Services form is filled out by paramedics on the dedicated air carriers, and by cabin medical attendants on the chartered air carriers. The air ambulance call report is modelled after the ambulance call report, which documents the events of each land ambulance call as well as patient information and care needs as required by Ministry policy and procedures.¹³ Only a few areas on the air ambulance call report are mandatory.

¹³ Section 38 of Regulation 19, made under the *Ambulance Act*, R.S.O. 1990, requires each member of an ambulance crew who responds to a call for ambulance services to ensure that a report with respect to the call and with respect to the patient be forwarded to the director.

Codes Used

Call takers assign a priority code to a patient, based on the severity of the patient's condition. Call takers refer to internal documents for assistance in determining the patient's code. Definition of these codes are not included in the *Air Ambulance Utilization Guide*. Even though hospitals are discouraged from giving a patient code when they call to request an air ambulance transfer, some hospitals devise their own definitions for the codes.

Base Hospital System

The base and associate base hospitals play a fairly well defined role in the quality assurance of the dedicated air ambulance system. These hospitals provide leadership and direction in pre-hospital emergency health services in their catchment areas. As well, base hospitals are involved in the quality assurance and audits of a sample of patient records, and they review situations where delegated medical acts are performed. Any concerns about the dedicated system are directed to the base manager and the base hospital medical director.

Base hospital medical directors, program directors, and base managers play a major role in determining the curriculum for training new air ALS attendants and for the continuing medical education of all staff at the dedicated bases. The medical directors participate on the Provincial Air Ambulance Utilization Committee, with program directors and base managers involved as needed. Chartered air carriers are not part of the base hospital system. Their charts are not audited, nor are their processes reviewed from a quality-of-care standpoint.

COMMITTEE'S OBSERVATIONS AND RECOMMENDATIONS

The Committee held lengthy discussions regarding health care services and quality assurance. What became evident is that an effective mechanism to address health care issues does not exist. The Provincial Air Ambulance Utilization Committee (PAAUC), as currently structured, is limited because it concentrates only on the dedicated system, base hospitals, and Air Ambulance staff. There is a need to establish a mechanism for greater participation of all stakeholders in quality assurance issues.

The Committee recommends that:

10. **A health care committee be established, to be made up of representatives from base and sending hospitals, Air Ambulance management and staff (air ALS attendants and Medical Air Transport Centre personnel), and air carriers. This committee should meet at least twice a year to discuss issues of concern and areas for ongoing improvement in the practices and procedures involving quality assurance.**

Air Escorts¹⁴

Terminology and Roles

One problem resulting from having so many types of air escorts is the use of unclear titles, which leads to confusion about the skills and abilities of each escort. Because "air ambulance officer/attendant" refers to both ALS- and BLS-prepared staff, health care providers and patients may not be certain of specific skills. Using "paramedic" helps to clarify the issue

¹⁴ Unless otherwise noted, this section does not refer to non-medical escorts.

somewhat, although this term is not totally understood either. Confusion is compounded because similar terms are used in the land ambulance system, but have different meanings attached.

The role of the cabin medical attendant (CMA) is particularly confusing, especially when one examines who may qualify as a CMA and examines the policies under which a CMA operates. The expertise of a CMA may range from having fairly minimal community college basic life support training to being a registered nurse (RN) or registered respiratory therapist (RRT). The popular view exists that a CMA's role is a limited one. In fact, the role a CMA plays can vary substantially. At a minimum, the CMA can act in a capacity similar to a commercial carrier's cabin attendant. At a more skilled level, he or she can perform the duties allowed within the professional scope of practice of an RN or an RRT.

As noted earlier, Emergency Health Services draft policy states that a CMA who is an RN or an RRT can be used by the sending physician as a fully qualified RN or RRT. This policy gives to the sending physician the decision regarding the scope of the attendant's practice. However, the situation is not that simple. The College of Nurses of Ontario notes that an RN, working as a CMA, is expected to adhere to the standards of practice for registered nurses, and is accountable for his or her actions and behaviours as a registered nurse. In the view of the college: "The registrant's primary accountability is to the client [patient]. It is the assessment of the client's [patient's] needs rather than the category of employment which dictates when RN . . . skills must be utilized."¹⁵

The different policies are confusing; the lack of clarity about the status of the draft policy is causing problems (some think it is current policy, others regard it as a draft, others know nothing about it); and the matter of liability, should something go wrong, is unclear. (This area is discussed in the section on legislation in Chapter 8.)

The term "hospital escort" is confusing, since a wide range of individuals can act in this capacity. Sometimes, an inappropriate escort is sent (for example, a paediatric nurse with a cardiac patient), or an escort is sent unnecessarily (an escort is sent even though the fully qualified ALS attendant can care for the patient). The role the hospital escort plays is unclear and may duplicate, or even hamper, patient care on the aircraft.

On a basic level, the terminology for the different air escorts needs to be clarified. Definitions need to be effectively communicated to those who must use and understand the terms. Selecting terms that indicate level of training may be useful. For example, for air ambulance officers/attendants, "ALS officer" and "BLS officer" may help to clarify their roles. Using the same language and terms for land- and air-trained staff would also provide much-needed consistency in the system.

The Committee recommends that:

11. **The title of each air escort be modified to reflect the level of training he or she has. Such a change would make it easier for clients to understand the level of care they can expect from each type of escort. Any change in title should be made in consultation with the land ambulance service.**

¹⁵ College of Nurses of Ontario. "Guidelines on the Application of the Policy on Accountability of Nurses Maintaining Registration as Both an RN and an RNA." *College Communiqué*, October 1993.

A great deal of confusion exists about the rôle of the cabin medical attendant and the duties he or she can be expected to perform. However, clarifying the CMA's rôle cannot be achieved simply by changing terminology. The original purpose of the CMA position was to provide someone who could monitor patients at a very basic level and perform duties similar to those of a cabin attendant on a commercial aircraft. Although this rôle is clear, a great deal of confusion exists because the professionals who are allowed to be CMAs possess a wide range of skill levels. As a consequence, CMAs take on a variety of rôles and hospitals have a wide range of expectations. Unfortunately, there is neither a single definition of the rôle of the CMA nor a clear description of the CMA's duties and responsibilities.

CMAs with basic training can provide minimal patient monitoring, yet CMAs who are RNs have been asked to perform RN duties on transfers. The problem with the latter situation is that the CMA is employed by, and is responsible to, the air carrier. The sending physician and hospital are responsible to the patient and for the patient. An employer-employee relationship does not exist between the hospital and the CMA. Draft EHS policy permits a qualified CMA to act as an RN or an RRT under the authority of the sending physician. Physicians put themselves in a difficult and undesirable position since they are delegating authority for a patient to someone they do not know. The Medical Air Transport Centre (MATC) also plays a rôle here. Anecdotal evidence suggests that air carriers who hire RNs or RRTs as their cabin medical attendants may be preferentially selected for flights over air carriers who have CMAs with

the minimum amount of training. Since chartered aircraft carry a significant number of priority 3 and 4 patients who would require a hospital escort, it is not surprising that MATC staff try to assist hospitals by connecting sending physicians with CMAs who are RNs or RRTs. The hospital then does not need to send an escort.

It is the opinion of the Committee that hospitals need to know exactly what they are getting when they are informed that a cabin medical attendant is on an aircraft. The rôle of the CMA must be determined and a clear job description of the rôle must be developed and communicated to those who need to know this information. The CMA's rôle should encompass both aviation safety and patient care. The current minimum skill level of the CMA should be re-evaluated as part of a rôle review. The CMA job description must not vary by who occupies the rôle. If a patient requires more care than the CMA's job description allows, the hospital should consider its responsibility for the patient and send a hospital escort.

The Committee recommends that:

- 12. The proposed health care committee (Recommendation 10) develop a clear job description of the rôle of the cabin medical attendant, taking into consideration the accountability of both the hospital and the physician for patient care.**

Education

In the consultations, the Committee repeatedly heard about problems involving the education of escorts.

There is no formalized training program for hospital escorts, nor is there a common training document that hospitals can refer to for assistance. Although some hospitals have designed in-house training programs, hospital escorts do not necessarily have reliable and consistent information on transferring a patient safely. An escort who is unaware of the effect of an air environment may be more of a liability than an asset to the patient. There is a need to have a consistent training program for hospital escorts.

The Committee recommends that:

- 13. A self-directed training program be developed to assist hospitals in educating staff who function as hospital escorts. The program should be designed jointly by representatives of hospitals, the Ministry, and air ambulance bases.**

The training program for cabin medical and basic life support attendants is offered through Seneca (Toronto), St. Clair (Windsor), and Confederation (Thunder Bay) colleges. The program at Seneca College, which is offered part-time and through distance education (correspondence), has come under a great deal of criticism. It is the only distance program, and therefore many students depend on it for access to education and future employment as a CMA. Perceived problems include lack of manuals, poor course organization, grades not received in a timely fashion, lack of timely feedback, inappropriate content, and courses that are too lengthy. A program committee of stakeholders (medical experts, graduates, base managers, and others) has been meeting over

the past several months to review Seneca's curriculum, and some needed changes are being introduced.

The Committee supports the initiative, having the opinion that problems must be resolved and students must be assured that the program is of high quality. Distance and part-time education require special commitment and careful attention since students have no or little opportunity for face-to-face communication and consultation.

The Committee recommends that:

- 14. Appropriate individuals at the Ministry of Health and the Ministry of Education and Training meet with representatives of Seneca College to address the problems with the Aero-Medical Transport Program that have been identified and to develop strategies for resolving them.**

The training program for advanced life support attendants has been identified as a key contributor to the shortage of air ALS attendants. Individuals hired to undergo ALS training may have to wait one to two years before that training program is actually conducted. The intensive program is designed and conducted by base hospital directors, medical directors, and MOH staff. Nevertheless, it costs approximately \$30,000 to train one person. Attempts are made to enrol at least six students, in order to justify the cost of preparation and teaching. Many prerequisites are necessary for the course so that students will come into the program prepared, but applicants and others have raised questions about the appropriateness of these requirements.

Exploratory work is in progress for establishing a self-directed training program, although it has been found that this approach may not be most suitable for these trainees. Nor is it clear when such a program might be introduced.

In summary, it is the opinion of the Committee that the overall education process contributes significantly to shortages of air ALS attendants. This problem is discussed further in the following section.

Supply of Staff

A safe and effective service is supported by an appropriate number of staff. An issue raised routinely in the consultations was the lack of air ALS attendants, a problem that has existed for some time. Each dedicated base should have nine ALS-trained staff, yet only one base has the full complement, with one base having as few as four ALS attendants. Although two ALS attendants are supposed to staff each dedicated aircraft, that seems to be the exception.

The problem of staff shortages was discussed at the May 1989 meeting of the Provincial Air Ambulance Utilization Committee (PAAUC). As an interim measure to deal with the shortage, the base hospital medical directors unanimously agreed to reduce significantly the annual 96 hours of continuing medical education in order to increase the number of shifts with two-person coverage for that fiscal year. PAAUC supported two ALS attendants at all times as optimal and desirable, with a minimum of one ALS and one BLS attendant on the aircraft at all times; a single-person crew was viewed as unacceptable. Medical directors on the committee expressed concerns about

stress, unfair expectations, and the safety of both patient and attendant when medical acts are delegated to an ALS attendant who works alone in the back of the aircraft. They supported the practice that the base physician could decide not to delegate medical acts, with the decision based on the patient's condition and individual circumstances. It was agreed that base hospital medical directors and their medical advisory committees would discuss the issue of delegating medical acts to an air ALS attendant working alone. At the same time, the College of Physicians and Surgeons of Ontario supported the substance of the comments made regarding delegated medical acts.

PAAUC reiterated these views in its meetings in December 1991 and December 1992. At the 1992 meeting, medical directors noted that they would request medical or nursing escorts to accompany patients on calls where only one attendant is on board, unless the hospital physician determines that an escort is not needed for a particular call.

A number of problems have been associated with recruitment. First, the Ministry of Health's Human Resources Branch (HRB) process appears cumbersome and lengthy. From the time a position is posted to the time an interview takes place, the HRB process can take five to eight weeks if a candidate is bilingual, and double that time if the candidate is unilingual. Second, a common perception is that the *French Language Services Act* is restrictive—that the level of French required is too advanced and the linguistic assessment unrealistic in terms of what language skills are actually required for the job. In certain areas, in

fact, there is a need for Oji-Cree rather than French. Such regional needs are not recognized. A third problem is the limited number of applicants, although because of the weak economy this is not the problem it once was. A fourth problem is that applicants lack the health care prerequisites. (Some new students are accepted without them.)

As well, a number of concerns have been associated with retention. A lengthy education process is one of these. Another problem involves a job reclassification grievance that has been outstanding since 1985. The inaction has been perceived by air ALS attendants as indicative of a lack of respect and recognition, and it has resulted in morale problems among staff.

The Air Ambulance Section and members of PAAUC are concerned about the shortage of air ALS attendants, yet little active effort seems to have gone into addressing the causes. As a result, alternative practice standards have been allowed to exist. It is the opinion of the Committee that a standard must be established and followed. Although it is recognized that situations may occur where the standard cannot be upheld, such occasions should happen infrequently, with the sending facility notified immediately.

ALS attendants are trained to provide care to critically ill patients and to perform delegated medical acts. If only one air ALS attendant is on the flight, he or she may not be given the authority to perform delegated acts. This situation adds a burden on the system, since hospitals may feel compelled to send an escort.

The Committee recommends that:

15. As standard practice, each dedicated aircraft have two advanced life support attendants 24 hours a day. Standards for the transition period should be put into place until the recommended standard is achieved. The transition period should be no longer than one year from the acceptance of this recommendation. For the duration of this transition period, an acceptable dedicated crew should include one advanced life support attendant, one basic life support attendant, and one hospital medical escort as an additional resource if the patient's condition warrants.

During the transition towards the recommended standard, processes would have to be put in place to increase staffing to the full ALS complement required in the five dedicated bases.

It is the opinion of the Committee that current processes to recruit and retain air ALS attendants actually block the creation of a pool of qualified workers. One key problem is the current education process. The Committee is aware of PAACU's June 1993 meeting, which noted in its minutes: "It is apparent that the MOH is not yet ready to move the ALS training program into a community college. Further refinement will be required by the MOH and the Provincial Committee before a move to college training can be contemplated." The Committee disagrees with this assessment. The problem with shortages has been discussed for more than five years, with no resolution to the problem. For at least that time, PAAUC has had the opportunity to develop and refine the

education program. The responsibility to educate air ALS attendants should be shifted from the health to the education sector.

The Committee recommends that:

16. The Ministry of Health divest itself of the responsibility of training air advanced life support attendants (paramedics). Discussions should begin immediately with appropriate individuals from the Ministry of Education and Training to review program requirements and standards for the air ambulance ALS education program for inclusion in community colleges. The advisory committee to govern the program and monitor its success should include, among other appropriate members, practising air ambulance paramedics, and physicians with aeromedical experience. Relevant courses being offered by educational institutions (for example, for the training of land ambulance attendants and other health care providers) should be assessed for their appropriateness to the ALS program. Consideration should be given to encouraging laid-off health care workers to undergo this training. Financial assistance may be obtained from the Ministry's Health Sector Training Adjustment Panel.

A second problem is the Human Resources Branch process. Not only is the process cumbersome, but also the *French Language Services Act* has been perceived as inhibiting otherwise qualified candidates, especially in the North, from being accepted for ALS training. In one instance of which the Committee is aware, an Oji-Cree speaker was

not accepted for training because he was not bilingual, even though Oji-Cree would be useful in north-western Ontario.

The Emergency Health Services Branch (EHS) recently attempted to change the French-language requirement from the advanced level to the intermediate-plus level. Because of the complex duties of the position, the French Language Evaluation and Consulting Services of Management Board of Cabinet did not approve the change. In the past, French-language training was provided to all eligible candidates. At present, applicants with no French are provided with information about courses, if they request it, whereas those with intermediate French skills are provided with Ministry-funded training to increase their skills. EHS is hoping to make a number of revisions to areas involving French-language ambulance services. One change would be to include part-time and volunteer positions in the overall designation of a service (a designated service must have 65 percent of staff with adequate French-language capability; currently only full-time staff are counted). A second change would be to request an extension of the original EHS implementation timeframe for bilingual services.

The Committee supports EHS's initiatives. In the Committee's view, the *French Language Services Act* should not be seen as a barrier, but rather as an opportunity to support French services. Ideally, language training should be provided to all candidates selected. However, the Committee recognizes the economic and logistic problems associated with this action. Creative solutions should be sought to deal

with these issues. In addition, there should be recognition for regional language needs, an issue of concern to Aboriginal communities.

The Committee recommends that:

- 17. The Human Resources Branch recruitment process be streamlined. Staff from the Office of Francophone Affairs, the French Language Health Services Office, and the Emergency Health Services Branch should meet to address the difficulties that French-language requirements may present to recruiting sufficient numbers of staff. Serious consideration should also be given to regional language needs (for example, Oji-Cree).**

A third problem is the reclassification grievance on behalf of paramedics that has been outstanding since 1985. The series of grievances on behalf of both land and air ambulance attendants has not been settled, despite an agreement in March 1990 to develop new class standards within 12 months. The consultations indicated that this inaction has led to staff morale problems and has negatively affected the working environment. It is the Committee's understanding that there has been some recent movement by both parties to reach an agreement. In the Committee's opinion, the inaction that has been allowed to continue for so long and the resulting consequences on morale are unacceptable.

The Committee recommends that:

- 18. The Ministry of Health and the Ontario Public Service Employees Union act immediately to settle the grievance outstanding since 1985 regarding reclassification of paramedics.**

Non-medical Escorts

Currently, no explicit written policy exists for using non-medical escorts beyond the stipulation that an attending physician determines whether the escort is necessary. A policy needs to be developed and clearly communicated regarding the use of non-medical escorts.

Medical Equipment

The consultations raised concerns about the adequacy of equipment carried on board the aircraft, the compatibility of hospital equipment with the aircraft, uncertainty over the equipment on board, and the process for reviewing and changing the list of equipment. A clear, definitive list of the equipment available on the aircraft does not exist. For example, the medical-related items in the standing offer agreement's aircraft-features list are not entirely reflected in the list provided in the *Utilization Guide*. The Committee is unaware of formal mechanisms that deal with such concerns.

The various lists of equipment that exist need to be reviewed with the purpose of developing a definitive list. The process should take into account the concerns raised above.

The Committee recommends that:

- 19. Medical equipment be reviewed by the proposed health care committee (Recommendation 10), with the purpose of developing a definitive list for both dedicated and chartered air carriers. This information should be reviewed annually in order**

to incorporate advances in medical technology. It should be communicated to users, with updates sent out as necessary.

Process of Transferring a Patient: Roles and Responsibilities

Who is responsible for the patient on the air carrier? The answer is not straightforward. In order to determine primary responsibility, it seems that situations need to be examined case by case. Furthermore, the transfer of responsibility to a base physician or other receiving physician does not protect a sending physician from legal actions arising out of interventions initiated at the sending hospital and continued en route. From a medico-legal perspective, every physician involved in the transfer of a patient will be held responsible for the assessment done and the care or advice provided, even though one physician may be designated “most responsible physician” for the transfer.

The Committee received most of its information about roles and responsibilities from internal draft documents, memos to staff, and correspondence to individuals. The responsibilities appear to be clearly delineated in these documents, but it became evident that some Air Ambulance staff were not aware of these drafts while others regarded them as accepted policy and practice. Similarly, the consultations indicated that many health care providers were unclear about their roles and responsibilities in a transfer. The Committee heard of hospitals sending escorts with the air ALS attendants because the hospital felt it was responsible for the entire transfer.

There is no clear policy governing the roles and responsibilities of individuals involved in air ambulance transfers. Furthermore, there is no clear process for developing policy. (Issues surrounding policy are addressed in Chapter 9, Conclusion—Critical Success Factors.)

Quality Assurance Processes

Forms Used

Although many hospitals use standardized forms to document patient information for emergency and routine transfers, no standardized form is used by hospitals for air ambulance transfers. Hospitals identify their own information needs and are left to their own devices to determine how best to meet them. One hospital the Committee visited used an air escort program document that included nine forms. Another used a form that the dispatch centre had stopped using in 1987. Other hospitals designed their own forms. The Committee heard from hospitals that experienced transfer delays because they did not have the information that the call taker requested. It is the opinion of the Committee that hospitals (and air ambulance centres/ services, if appropriate) should be provided with a standardized form that clearly stipulates the information likely to be asked for by the call taker.

The air ambulance call report is used to record patient and flight information. Few fields are mandatory, which may be best since the call report asks for medical documentation that is beyond the minimum level of training required of the cabin medical attendant. (Even if a hospital escort is available, it is still the CMA's

responsibility to complete the form. The air ALS attendant's training is sufficient to complete the report accurately.) Much of the data requested could be regarded as confidential patient information, yet copies of the report are required to go to both the air ambulance service and the base hospital. (Base hospitals that receive the form from chartered carriers have no formal relationship with the carrier, the cabin medical attendants, or the patients.) It is also unclear whether the information collected on the call report coordinates with the information available on the transfer forms and the records that accompany the patient. The Committee questions whether all this information is necessary. Some of it may be irrelevant for the transfer or may duplicate data collected elsewhere. The information ultimately collected should be necessary and useful for patient care and for quality assurance purposes.

The Committee recommends that:

20. **Standardized information forms be developed by the proposed health care committee (Recommendation 10). The information requested should be relevant to the task being conducted and should not replicate information collected elsewhere. Forms should include a standardized document which clearly stipulates the information that will be asked by the call taker when a transfer is being arranged, and a revised air ambulance call report. These forms should be distributed to all clients who arrange air ambulance transfers.**

Codes Used

In the consultations, the Committee heard a great deal of criticism about the priority codes and their application. First, there is no consistent definition of what each code means. The Medical Air Transport Centre (MATC) uses internal documents to assist call takers; the *Utilization Guide* does not include any definitions to assist health care providers; and various hospitals make up their own definitions or use definitions from the land ambulance system. Second, the codes have been criticized for being too broad and not sensitive to the situation. For example, are there differences between a "serious 3" and "not so serious 3"? does a code 4 mean the same thing to everyone? if a patient is critical but needs four hours to be stabilized, is he or she a code 4 (timing critical) or a code 3? if the patient is not critical but specialized medical services are not available, is using a code 4 justified? Third, the logic and the definition of each of the codes may be understood by MATC, but are not always clearly understood by or communicated to the users.

The Committee questions the adequacy of the current coding system. The system and its application originated from the land ambulance service. Because of the assumption that the person calling in was not a health care professional, a code was assigned by the land ambulance dispatch. With interfacility air ambulance transfers, however, individuals calling in are more likely to be health care professionals, knowledgeable about the patient's condition and whether the patient's anticipated needs exceed the capacity of the hospital and staff. As recommended earlier

(Recommendation 5), it would be the responsibility of the physician to determine the severity of the patient's condition. The physician must be equipped with a mechanism to help determine the priority of the patient for transfer. That mechanism does not exist.

The Committee recommends that:

21. The current system for coding patients be reviewed and assessed by the proposed health care committee (Recommendation 10) in terms of the system's sensitivity to the condition of the patient, the length of time the patient can wait before a transfer occurs, and the adequacy of resources available to meet the needs of the patient. Users of this revised priority system for interfacility transfers should be educated about its proper use.

A system is in place in MATC through which staff can report their suspicions of "abuse." The practice of "bumping the code" occurs when a physician, in order to secure an aircraft more quickly, codes a patient at a higher severity than the patient actually is. If MATC suspects this practice has occurred, the case is reviewed internally. There has been an increase of "bumping the code" incidents in the last year, perhaps as a result of hospital bed closures and because receiving hospitals may be unwilling to hold a bed for a patient who will take time to arrive. Of approximately 37 suspected incidents in one month, 15–17 cases were regarded internally as legitimate critical cases. No follow-up was conducted on the other cases.

Developing a priority system for interfacility transfers will not eliminate abuse of the service. A process for rigorous follow-up of inappropriate use of the system needs to be put in place. This process should include such direct methods as sending a letter to the chief of staff, with copies to the individual physician and the hospital president. The inappropriate use of the system would be described, with follow-up action requested. (The importance of addressing issues of concern and holding individuals accountable for their actions is noted in Chapter 9, Conclusion—Critical Success Factors.)

Base Hospital System

Each base hospital establishes its own quality assurance procedures within general guidelines provided in its contracts with the Ministry of Health. There does not, however, appear to be consistency in practices across all bases. For example, only two bases conduct service reviews of their users. The Air Ambulance Section has encouraged the other bases to conduct reviews, but has left the method to the individual base.

The consultations indicated that some base hospitals are unclear about their missions, roles, and objectives; yet base hospitals have never been audited. Base hospital utilization committees deal with issues pertaining to the base hospital, the dedicated service, and the base's catchment area. These committees report to the Provincial Air Ambulance Utilization Committee. The chartered air carriers are not an integral part of this base hospital network and do not participate in either the base hospital utilization committees or PAAUC.

Cabin medical attendants are not monitored, and there are no formal quality assurance reviews of the CMA services that the charters provide. Any problems are directed to the Air Ambulance Section, even though they may be about patient care. In contrast, problems with the dedicated system go directly to the base hospital for resolution.

It is the opinion of the Committee that the chartered system must become an integral part of the base hospital. The recommendation to establish a preferred-provider system (Recommendation 3) should facilitate the participation of chartered carriers in the base hospital network.

The Committee recommends that:

- 22. The preferred-provider system become an integral part of the base hospital system in order to ensure the maintenance and monitoring of quality transfers.**

A number of additional areas were addressed by the Review. Collaborative relationships exist between the Air Ambulance Section and the Ministry of Natural Resources, Transport Canada, and the Ministry of Health's Northern Health Travel Grant Program, and this chapter reviews the role of these arrangements. A second area is legislation. Acts and regulations provide a framework for policies and activities, and the impact of legislation on air ambulance services is examined. A third area is the management information system. The ability of this system to support planning and day-to-day operations is discussed. A fourth area includes information and user education, and the chapter examines the adequacy of available information and the mechanisms to educate users. Finally, the areas of repatriation, altimeters, and the multi patient transfer unit are also briefly discussed.

Administrative Relationships

The Air Ambulance Section has a number of working relationships with organizations and programs that assist the section in carrying out its work or play a role in ensuring that activities are appropriate and safe.

Ministry of Natural Resources

The ministries of Health and Natural Resources share responsibility in a number of areas involving air ambulance activities: standards and requirements for approved commercial air carriers; air carrier contract and site inspections; heliport development and operations; standards for hangar/base facilities; inspector identification; access to aviation files and dispatch systems; and legal

advice and services. A memorandum of understanding, which governs how the ministries will conduct these activities, also includes the use of Ministry of Natural Resources (MNR) aircraft for supplementary air ambulance transportation.

MNR owns a fleet of 34 aircraft. It has outfitted one of its Twin Otter aircraft in Sudbury to conduct air ambulance flights. This plane, which is on the approved list of carriers for air ambulance transfers, is regarded as one of the standing offer agreement charters. A second MNR plane, planned for Sault Ste. Marie, was experiencing staffing problems at the time of the Review.

Transport Canada

Transport Canada (TC) is the regulatory body that determines whether an air carrier is safely equipped to conduct a commercial operation. Since TC does not recognize "air ambulance" as a specialty operation, there are no TC standards addressing the patient transfer activity. TC conducts its own aircraft inspections. (See Chapter 6, Standards and Inspections—Aviation Quality Control.)

An air carrier wishing to transport patients must comply with the standards established by the Air Ambulance Section. Air Ambulance carries out its own audits and inspections and informs TC of any problems that may violate regulatory standards.

Ministry of Health's Northern Health Travel Grant Program

The Northern Health Travel Grant Program helps to pay travel costs of Northern Ontario residents who must leave their communities to

get hospital or other medical care, but do not require an ambulance for travel. On November 22, 1993, the Minister of Health announced changes to the grant's eligibility requirements. Reimbursement for mileage is being reduced, and the amount the Ministry will pay towards travel costs will be based only on the distance between the patient's home and the nearest appropriate specialist or designated health facility. A list of available specialists by location will be used to monitor reimbursement requests. Clients not qualifying for an air ambulance as an insured service are referred to the program by the Medical Air Transport Centre.

Committee's Observations and Recommendations

The relationship between the Ministry of Health and the Ministry of Natural Resources has been beneficial. A number of opinions have been expressed about making MNR aircraft available for routine air ambulance transfers and for backup in emergency situations. Using MNR aircraft for air ambulance may seem economical because of lower accounting and overhead costs, and because the aircraft are owned outright by government. However, although a large number of MNR aircraft could potentially be used for air ambulance transfers, guarantees of availability would be difficult. Use of MNR aircraft varies by season (aircraft are constantly busy during fire season, for example).

As currently structured, the primary purpose of MNR aircraft is to conduct MNR activities. Air ambulance transfers are a secondary activity. It is the opinion of the Committee that MNR

aircraft should be called to conduct air ambulance transfers only if dedicated and chartered aircraft are unavailable. MNR should be the "third-tier" provider—for emergency backup only—and should not be regarded as an integral part of the air ambulance service. The practice of outfitting MNR aircraft and telling communities that these aircraft provide air ambulance services has led to a great deal of confusion. It has also led to the mistaken belief that an air ambulance is located in the community. The role MNR plays needs to be clarified and communicated to consumers. The recommendation to establish an air carriers' committee with MNR representation (Recommendation 4) would help to strengthen the working relationships between MOH and MNR.

The role of Transport Canada (TC) is specifically addressed in the Terms of Reference of the Review. The Committee was asked to examine Transport Canada's role in several areas: the standards established and the service levels provided by the Air Ambulance Section for patients who are critically ill as compared with non-critical patients who are also transported; and the general management system established and employed to oversee the program and to ensure contracted carriers' conformance to established standards and quality principles.

Transport Canada has a minimal role in these areas. It establishes standards for such matters as the restraint of stretchers and the obstruction of exits. The Ministry of Health determines standards and service levels for all patients who are transported. As for TC's impact on the general management system that oversees the

program, it is indirect rather than direct. The perception exists among Air Ambulance staff that TC's standards are not as high as they need to be for patient transfers. The result has been that Air Ambulance staff have assumed a more active role in these areas. The supervision of these activities has become part of the general management system in the Air Ambulance Section.

It is the opinion of the Committee that the Ministry of Health duplicates activities that are carried out by, and are the responsibility of, Transport Canada. Attempts should be made to share more information and to clarify the roles and responsibilities of each organization in order to lessen duplication. TC conducts technical audits that could be made available to MOH. MOH should avoid duplication by auditing the medical equipment and only the technical standards it requires over and above TC's requirements. The proposed preferred-provider system (Recommendation 3) would make this activity more manageable, since fewer carriers would be providing service. MOH could request that TC's audits be done without notifying the air carrier first. The proposed air carriers' committee with representation from TC (Recommendation 4) should be used to address issues of duplication and areas of collaboration.

Although the Northern Health Travel Grant Program assists people who are not eligible for air ambulance services, it is not totally clear where one program ends and the other begins. For example, the Northern Health Travel Grant Program covers patients who receive cancer treatment and dialysis, yet a number of seats

on the multi patient transfer unit are reserved for cancer patients. The grey area concerns the transfer of priority 1 and, possibly, priority 2, patients.

The Committee recommends that

- 23. Discussions be initiated immediately with the Northern Health Travel Grant Program in order to identify duplications and responsibilities in relation to transferring priority 1 and priority 2 patients.**

Legislation¹⁶

There is no air ambulance act. What does exist is the *Ambulance Act*, R.S.O. 1990, c. A.19. Regulation 19, R.R.O. 1990, made under the Act, refers to "ambulance" and "ambulance services." There is no reference made to "air ambulances" in the Act. Regulation 19 is limited to land except for one subsection (2.2), which notes that if an ambulance service is provided in an authorized specific situation, the operator must comply with every condition specified in his or her licence.

Two Service Streams

As noted earlier, the air ambulance service is largely provided through two basic service streams. The Ministry of Health defines the dedicated service as an "air ambulance" and the chartered service as an "air transport service." Legal counsel's view is that the term "ambulance" seems to apply to both the dedicated and the chartered systems. Distinguishing between an ambulance and an air transport service does not denote a

¹⁶ Legal opinion was sought from Mel Springman, legal counsel, Legal Services Branch, MOH. "Legal opinion" refers to Mr. Springman. Additional opinion on the role of the cabin medical attendant was sought from Christine Henderson, legal counsel, Legal Services Branch, MOH. Ms. Henderson's opinions are referred to as the "second legal opinion."

fundamental difference in practice or law. The difference seems to be conceptual—a matter of semantics.

The perception exists that chartered aircraft cannot be called ambulances because, once in the air, they are under federal jurisdiction. (Aeronautics is a matter of exclusive federal jurisdiction.) Legal counsel's view is that any conveyance may be called an ambulance.

Staffing

Dedicated aircraft were intended to have two advanced life support (ALS) attendants on board at all times. Staff shortages have resulted in dedicated aircraft flying routinely with different configurations of staff. Legal opinion is that this staffing could pose problems. Since the Ministry of Health regulates an air ambulance service, the Ministry could be exposing itself to liability if there is negligence on the part of MOH in regulating this service. Thus, the policy and the practice of staffing could affect the Ministry of Health's legal liability.

The role of the cabin medical attendant (CMA) on chartered aircraft raises an interesting legal issue. The draft policy of the Emergency Health Services Branch states that a cabin medical attendant who is a registered nurse (RN) or a registered respiratory therapist (RRT) may act in his or her professional capacity as long as he or she has been given the authority to do so by the sending physician, and as long as only one patient is being transported.

Legal opinion from both counsels is that it is not unreasonable to hire someone to perform only certain tasks. The employer-employee

relationship, in such a case, supersedes the practitioner's ability to act fully within the scope of his or her practice. The job specifications of the CMA impede the RNs from using their full range of skills.¹⁷ Their scope of practice and authorized acts are set out in the *Nursing Act, 1991*. The RN is bound by all the rules and regulations of the profession of nursing. He or she has agreed to comply with the employer's rules and has voluntarily restricted practice. However, where the RN employed as a CMA is involved in a crisis situation, he or she may be bound by ethical and professional rules to render temporary emergency assistance that goes beyond the job specifications of the CMA.

The opinion of both legal counsels is that using RN skills for a single-patient transfer and not for a multiple-patient transfer is not mandated as a matter of law. The number of patients being transported should not affect how a professional acts. This distinction is obviously a matter of Air Ambulance policy.

The potential dual role of the RN as a CMA puts chartered carriers in a strange position. A chartered carrier can hire RNs, but RNs cannot act in their professional capacity unless a sending physician says they can. If something goes wrong, it is entirely possible that both the chartered carrier and the sending facility can be held liable, depending on whose instructions the attendant is following. Second legal counsel noted that the delegation of certain procedures also might pose a problem for the physician in an air carrier situation where the knowledge, skills, and judgement of the RN, employed as a CMA, are unknown to the physician.

¹⁷ This situation also applies to the RRT, but for simplicity only the RN is used in the example.

Consequences of the Legislation

Legal counsel's view is that the lack of legislation may not, in itself, create serious problems in the provision of the air ambulance service. Problems identified in various inquests have not been due to gaps in legislation, and recent juries have not made recommendations to enact legislation in order to address problems.

Legal counsel pointed out that the *Ambulance Act* and most of the regulations do not apply to Air Ambulance. The Air Ambulance Section seems to have fashioned some of its policies after the Act and regulations. Even though Air Ambulance policies are not grounded in legislation, it may be awkward to change some of them because the changes might have a "psychological impact" on the land system. (An example would be allowing one paramedic for the air service while two are required on land.)

Committee's Observations and Recommendations

The lack of a legislative framework governing how the air ambulance service is run has provided management with a great deal of latitude in determining the role, standards, policies, and procedures of the service. According to the Air Ambulance Section, the law as it is applied does not create any day-to-day problems. Attempts have been made to copy many of the same premises on which the land ambulance service was developed. This practice has led to the misconception that some

Air Ambulance policies and procedures are rooted in legislation and, therefore, are beyond discussion, debate, and change.

It is the opinion of the Committee that the lack of legislation governing the air ambulance service does not present a problem, so long as clear roles, standards, policies, and procedures are established and adhered to. Among these are policies involving staffing and the role of the cabin medical attendant. The Committee has recommended clarification in a number of these important areas.

Management Information System

Data support the planning and evaluation of activities. The Air Ambulance Information Management System (AIMS) has recently been developed as a key data initiative to support the air ambulance service. AIMS includes both the call management and the invoice-processing and cost information systems. The call management system contains a critical subset of system features required in the Medical Air Transportation Centre: emergency dispatch (priorities 3 and 4); aircraft availability; patient transfer planning (priorities 1 and 2); and patient transfer monitoring. AIMS will develop, modify, and improve these features as well as establish computer linkages with external sources for receipt and transmission of this information. The invoice-processing and cost information system attempts to improve the claims audit process and assist staff in retrieving and verifying claims information. AIMS is expected to generate regular management reports.

Committee's Observations and Recommendations

The information that the Air Ambulance Section made available over the course of the Review could best be described as being in the early stages. Regular management reports were not yet available, and the evaluation of the multi patient transfer unit had been delayed largely because of a lack of data. The Committee had difficulty obtaining current utilization information. Apart from data received after the final meeting of the Review Committee (February 1994), the most recent data were from the first quarter of 1992.

It is the opinion of the Committee that the lack of data provided in a timely manner seriously undermines management's ability to monitor air ambulance services and make appropriate changes. The recommendation to conduct a provincial utilization review of the service (Recommendation 2) depends on the availability of this information. Efforts to make these data available must be expedited.

Information and User Education

The formal tool to educate users about the appropriate use of the air ambulance service is the *Air Ambulance Utilization Guide*. Published by the Air Ambulance Section in July 1991, this bilingual booklet is directed at a number of audiences and covers a range of topics from general to highly specific. Upon publication, the guide was sent to a general mailing list, which included all Ontario hospitals (the chief executive officers), all land central ambulance communication centres, and all air ambulance carriers. From time to time, memos are sent to

hospitals or ambulance centres, informing them of new policies or reiterating the need to follow proper procedures.

Staff have been occasionally requested to organize formal information sessions, but there is no formal education component for users on how to access the air ambulance system effectively.

Committee's Observations and Recommendations

Internal consultations with Air Ambulance staff pointed to a number of problems involving hospital users. One staff member noted that hospitals, as major clients of the system, "don't and won't understand the system." Some examples of problems include: receiving hospitals that insist a patient be transferred immediately, or else a bed will not be kept (most hospitals hold the bed once the complexity of the transfer is explained); patients and escorts who do not know that they may need to take money to pay for expenses; escorts who do not know that they have to return on their own; health providers who insist on a particular—but inappropriate—aircraft, or insist on an air transfer when land would be as good or better; hospital staff who request a transfer without knowing what patient information they will have to convey; and hospital escorts who are sent when they are not needed, resulting in a costly duplication of effort.

It is the opinion of the Committee that one major reason these problems exist is a lack of information and education about how the system works. The information available and

the way in which it is shared are inadequate. The *Air Ambulance Utilization Guide* does not accurately reflect current policy and practices (for example, only some information requested by the call taker is included). The guide is directed to a multitude of audiences, which weakens its impact. It is not widely distributed. Memos sent to hospitals do not necessarily reach the people who need the information.

Knowledge about the system needs to be increased. Documentation should be produced that clearly explains the different service streams; the escorts available; the role and responsibilities of the Medical Air Transport Centre; and the responsibilities of the sending, receiving, and base hospitals. Standardized information forms must be developed and be made easily available. Although this information should be made accessible to all users—patients, hospitals, land ambulance centres, and air carriers—consideration should be given to producing modules directed at specific audiences. For example, a brochure with necessary information could be developed for patients preparing for a transfer, while hospitals could receive a more comprehensive document that included the standardized forms. The Air Ambulance Section should also explore other effective methods for user education and communication, including teleconferences, base hospital regional meetings, and participation in provincial and regional conferences hosted by the Ontario Hospital Association, the Ontario Medical Association, and other professional organizations.

The Committee recommends that:

24. **Information documents and programs be developed for the wide range of stakeholders who use the air ambulance service. Documents should meet the information needs of the intended stakeholder. Programs should communicate information through a variety of innovative methods.**

Additional Issues

Repatriation

The Ontario government currently pays 25 percent of the costs of transporting Ontario residents back to the province for admission to hospital. The Committee reviewed the background study prepared on this issue, and discussed the merits of eliminating the 25 percent support. Ontario is the only province that provides this financial support. (A summary of other jurisdictions appears as Appendix D.) The Committee concluded that financial support for repatriating citizens should be eliminated. This position seems consistent with the one being taken in a number of policy discussions in government.

Altimeters

The issue of altimeters was discussed with Air Ambulance staff during the course of the review. Weather is, obviously, a key factor in the delivery of air ambulance services. A number of complaints heard in the consultations, and noted in reviews and inquests, pointed to weather as an important variable. The Committee understood that a

solution to some weather-related problems is possible in selected circumstances. This solution is to provide altimeters and radios in appropriate airstrips in order to permit instrument approaches in difficult conditions. The equipment is not costly and, in the opinion of the Committee, did not warrant waiting until the end of the Review for implementation. The Committee was aware that Air Ambulance staff had been working on this issue for some time, but that progress was slow. On November 29, 1993, the Committee recommended to management in the Emergency Health Services Branch and in the Air Ambulance Section that resources be found to provide altimeters and radios in appropriate airstrips. The Ministry of Health will fund the equipment, now on order through the Ministry of Transportation (MTO). MTO, with the help of MOH, will be responsible for installation and service. The altimeters and radios are scheduled for delivery by March 31, 1994, and will be installed as promptly as possible. The Air Ambulance Section will advise dedicated and chartered carriers of the implementation date in the spring of 1994.

Although the Committee was pleased to see such a prompt response, it was concerned that this initiative had not been carried out earlier. The appropriate consultations had taken place, the solution was relatively simple and not very costly, and the benefit to the public was obvious.

Multi Patient Transfer Unit

The multi patient transfer unit (MPTU) was initiated on November 17, 1992, as a one-year pilot project.¹⁸ The MPTU is an aircraft capable

of carrying six stretcher patients plus twelve ambulatory patients or escorts. It is intended to provide non-urgent patients with air transport along a corridor from Kapuskasing to Toronto. To be eligible, an individual must be a hospital in-patient, a nursing home resident, or a client of a home care program.

In November 1992, a monitoring and advisory committee was established to oversee the project. A mid-term evaluation was conducted, unfortunately with results of limited usefulness. As well, an interim report on the MPTU was completed by the Emergency Health Services Branch. On June 24, 1993, a working group was established to formulate and implement an action plan to resolve issues about the MPTU pilot project. Shortly afterwards, an advisory committee was struck to identify utilization, activities, and costs of operating the MPTU in the trial period and to make recommendations for future service based on the trial experience. This final evaluation is taking place internally by an EHS staff member. The progress of this evaluation is questionable at this point because of problems obtaining data. These data will, at best, be able to provide an overview of utilization and not a comprehensive evaluation of the service.

The Air Ambulance Review Committee was not asked specifically to address the MPTU. In the consultations, the Committee heard many concerns expressed about the unit from consumers, health care providers, and air carriers. Comments centred on insufficient consultation with users and providers before implementation; the lack of participation by the districts served by the MPTU in a needs analysis for the service; the lack of a review of

¹⁸ MPTU is also referred to as the multiple patient transport unit.

the infrastructure required to support the MPTU (for example, land ambulance service); the controversy surrounding awarding of the air carrier's contract; the fact that no evaluation component and data collection mechanisms were in place at the beginning of the project; confusion regarding the policy of who can use the MPTU and when it can fly; and suspicion over the objectivity of the final evaluation being conducted internally.

The Committee views this issue with great concern. The MPTU seems to be a viable concept in principle. However, the lack of stakeholder input in its development and its implementation, the unclear policies for when it can be used, and the lack of concrete data to evaluate the project with any validity have created numerous difficulties and much ill will among those affected by the service. The MPTU is, unfortunately, turning into a political issue with intense lobbying from those who are both for and against the project. The Committee has experienced this lobbying first-hand. At this point, the Committee feels that the only way for the controversy to be settled with some semblance of credibility is for the MPTU to be evaluated by an objective researcher not associated with the Ministry of Health.

Part Three
Conclusion and Recommendations

Chapter 9

Conclusion — Critical Success Factors

The air ambulance service cannot adequately be described or understood as a collection of discrete issues. Rather, the service covers a wide range of interrelated issues and must be viewed as a system of issues where the whole is greater than the sum of its parts.

In order to ensure that this framework is understood by decision makers, the Committee has identified five critical success factors that must be put in place if successful changes are to be made in the air ambulance service. These factors are: purpose, structures, stakeholder relationships, strategic orientation to service, and commitment to implementation.

Purpose

Purpose includes vision, mission, objectives, priorities, and strategies. A clear purpose helps one to adapt to changing environments and increasing demands. It is the opinion of the Committee that the air ambulance service does not have a clearly articulated purpose.

The service is presented as an air ambulance service for critically ill patients and a patient transfer service for less critically ill patients. This distinction is confusing to many people. It also raises the question of whether it is appropriate for the air ambulance service to transport a wide range of patients from the critically ill to those who are seeking routine, deferable care.

The air ambulance service is characterized by two focuses: aviation/transportation, and health care. Referred to by some Committee members as the “two solitudes,” these focuses represent different cultures and different styles, and result in the selection of different

objectives, priorities, and strategies. Of the two, the aviation culture has more of an individual problem-solving approach: identifying and reacting to problems using appropriate lines of authority. The health care culture has more of a needs-based approach: balancing the power and expertise of a variety of stakeholders. Over the past decade, the Air Ambulance Section has made tremendous efforts to bring a high level of safety and efficiency to the aviation focus of the service. The same attention has not been paid to the health care focus.

It is the opinion of the Committee that the primary purpose of the air ambulance service is health care and not transportation. This purpose should be reflected in the vision and mission of the service. In order to strengthen this purpose, a suggestion was made in the consultations to hire a full-time medical consultant. In the Committee’s opinion, however, this initiative does not address the problem. What is necessary is the need to articulate a clear vision and mission of the service, and to establish clear objectives, priorities, and strategies to support the health care focus.

The Committee recommends that:

25. **A clear vision and mission, and clear short- and long-term objectives, priorities, and strategies, be developed for the Air Ambulance Section, recognizing that the primary purpose of the air ambulance service is health care. This information should be communicated to all stakeholders.**

Structures

The air ambulance service must have supporting structures that allow it to fulfil its purpose and objectives effectively. These structures include appropriate links with the broader bureaucracy and with the Emergency Health Services Branch (EHS). They also include supports internal to the section.

Within the bureaucracy, the section is part of the Emergency Health Services Branch, which is within the Population Health and Community Services System Group. In the absence of good communication mechanisms, this organizational structure creates challenges for coordination and integration of efforts in certain important areas. For example, pre-hospital care is a significant part of the hospital system, with hospitals playing a key role in the success of emergency programs. Therefore, regular and effective communication is necessary between the section and the Health System Management Group (which oversees institutional health). As another example, the Northern Health Travel Grant Program (which provides funds to Northern Ontarians who must seek health care in the south) and the Underserved Area Program (which attempts to strengthen the health care services offered in the North) may be duplicating some of the efforts of the Air Ambulance Section rather than complementing them and strengthening the range of available services to Ontario citizens. Again, improved communication is needed.

Within the EHS Branch, air and land ambulance services must be better coordinated and integrated. This improved coordination has been proposed by the Emergency Medical

Services Review,¹⁹ and has been developed by the Ambulance Study Committee²⁰ referred to in Chapter 1. In the consultations, the Air Ambulance Committee heard of duplications between, and gaps in, air and land services. Examples were given of changes in policy and practice made in one area without regard for the impact on another. Relationships were characterized by senseless turf battles over the role of each area, with service compromised because neither criteria nor a coordinated data system exists for establishing when it is more appropriate to use air, and when it is more appropriate to use land. These problems do not serve the system well. It is regrettable that the Provincial Emergency Health Services Advisory Committee (PEHSAC) has essentially been disbanded. (It has not met for over two years.) PEHSAC could have been one vehicle for ensuring coordination and integration of air and land services.

The Committee recommends that:

- 26. Coordination of the air and land ambulance systems be improved both on a micro level (ongoing communications, daily service, terminology) and on a macro level (organizational linkages).**

Within the Air Ambulance Section, staff is at a bare minimum, considering the scope of the operations, the amount of growth over the past few years, the high profile of the service, and the complexity of the program. The Committee believes that a number of recommendations, if implemented, would have a positive impact on the staff's workload and on the type of work staff do. The air ambulance service has grown from an immature program into adolescence. The review of the governance structure for

¹⁹ *Final Report of the Emergency Medical Services Review*. Gene Swimmer, Chair. December 28, 1991.

²⁰ "Report of the Ambulance Study Committee." Mark Cox, Chair. December 10, 1993.

emergency health services, the study of hospital- and community-based emergency care, and the approaching retirement of the Air Ambulance Section manager provide an opportunity for the Emergency Health Services Branch to review the placement of Air Ambulance within the branch's operations and to consider new ways of organizing and managing the service. The Committee is aware that a number of changes are being considered in the branch, and it advises that the observations and recommendations contained in this report be seriously considered in discussions of future direction.

The recommended establishment of an air carriers' committee and a health care committee would provide valuable input into the operations of the service. Such input would result in a more rigorous and publicly defensible air ambulance system. The proceedings of these two committees must be examined in a forum where broader policy discussions take place.

The Committee recommends that:

- 27. A joint committee be established, made up of representatives from Air Ambulance staff, base hospitals, air ALS attendants, and dedicated and chartered carriers. This committee should meet at least twice a year with the purpose of advising the Ministry of Health on Air Ambulance policy. The proposed air carriers' committee (Recommendation 4) and health care committee (Recommendation 10) should report to this joint committee.**

Stakeholder Relationships

The building of good relationships is critical to working towards a common purpose. Unsatisfactory relationships emphasize conflict and distrust—and waste a great deal of time and effort that could be used positively towards change and improvement.

It is evident to the Committee that a serious “us versus them” mentality exists among all stakeholders in the air ambulance service (staff, health care providers, air carriers, and users of the system). This type of relationship is counterproductive to the delivery of an effective and efficient service. A major part of the problem seems to be rooted in the fact that no ongoing and consistent mechanisms exist to involve stakeholders in problem identification and problem solving. Rather, a pattern of complaint and denial emerges, in which all stakeholders seem to participate. It is the Committee's opinion that the recommendations to establish a number of structured committees would help improve such an environment (Recommendations 4, 10, 27). In addition, practices must be built into daily operations which will build firm relationships and improve the quality of the service.

The Committee recommends that:

- 28. Management of the Air Ambulance Section review and revise its policies and procedures to ensure that mechanisms exist to identify areas of concern held by staff, health care providers, air carriers, and users of the service; to address these concerns in a responsible and timely manner; to hold individuals accountable**

for their actions; to communicate promptly the results of decisions to appropriate parties; and to monitor issues over time in order to determine whether broader policy changes must be made.

Strategic Orientation to Service

The Air Ambulance Section seems to function in a reactive, crisis-management style that responds to incidents and emergencies. Short-term, immediate solutions are emphasized—the quick fix and the hasty actions, rather than strategic and long-term planning. In part, this approach may be the result of the fact that the service has a high public profile. When something goes wrong, the section is put in the position of constantly having to defend itself. Another factor may be that strategic planning for emergency health services is assumed to include strategic planning for air ambulance services, when in fact air ambulance is not addressed as a service in its own right.

It is the opinion of the Committee that the management and operations of the Air Ambulance Section must incorporate a strategic orientation that builds on the underlying principles recommended earlier (Recommendation 1) and on the critical success factors noted above. This strategic orientation will influence the quality of internal operations. It must also be used to evaluate critically the need for air ambulance services. Such an evaluation demands that a systemic view of the service be taken. The key question that should constantly be asked is: What is the most efficient and effective way to meet people's health care needs? Is it by strengthening and expanding a transportation

system that brings people to the care they need, or is it by establishing the services where the people need them? This question must take into account fiscal constraints, advances in medical and information technology, and improved communications networks.

A strategic orientation is critical for an effective and safe air ambulance service. It is also critical for a service that is part of the government's health care reform agenda. This strategic orientation must include the following components:

- a clear purpose;
- a long-term planning framework, which includes short-, medium-, and long-term goals;
- a system for monitoring trends and issues on an ongoing basis and that has the facility to make appropriate changes to goals based on these trends;
- a clear process for developing, implementing, and evaluating standards, practices, and policies;
- an approach that involves all staff, health care providers, and air carriers as members of a team who have a common goal of providing a high-quality service;
- strategies to communicate information, standards, protocols, and policies to all stakeholders in an effective and timely manner;
- a philosophy that focuses on continually improving the quality of the service; and

- a system orientation which recognizes the broader issues that have an impact on the service, and which demands a critical evaluation of the appropriate role of the air ambulance service in the health care system.

Commitment to Implementation

The final critical success factor is a commitment to implementation. After much deliberation and study, the Committee offers 28 recommendations to the Minister of Health for her consideration. These recommendations are closely interrelated. Some recommendations flow logically out of others, and some are necessary to address before others can be implemented. Implementating recommendations in only certain areas will not result in positive system-wide change.

A commitment to implementation represents a willingness to follow through with recommended changes. In order to do this effectively, a map is needed to give direction and assistance. On the following pages, the Committee presents such a map—a work plan—with the hope that it will provide some guidance to decision makers in achieving the greatest impact from the recommendations.

WORK PLAN

The Review Committee presents the following work plan for the Minister's consideration. Recommendations can be implemented in the short term (1–6 months), medium term (6–12 months), or long term (12–18 months). Some recommendations are ongoing in nature. A number of medium- and long-term recommendations require planning and development before they can be implemented. This planning should begin immediately.

Recommendations requiring immediate planning and development are identified with an asterisk (*).

IMPLEMENTATION TEAM

The Committee suggests that an implementation team be appointed by the Assistant Deputy Minister, Population Health and Community Services System Group. The team should have three members, only one of whom should be from the Air Ambulance Section (so as not to impose an added burden on staff and impede day-to-day operations). The implementation team should report to the ADM.

Purpose

To act on a number of key recommendations in the short term.

To monitor the successful implementation of all 28 recommendations contained in the report.

To advise the Assistant Deputy Minister, Population Health and Community Services System Group, on a quarterly basis, of the progress of the implementation work plan.

Tasks

A. Establish the committees recommended in the report, and further develop and approve the Terms of Reference of each. These committees include:

Joint committee (Rec. 27)	short term (1–2 months)
Air carriers' committee (Rec. 4)	short term (1–2 months)
Health care committee (Rec. 10)	short term (1–2 months)

B. Develop a request for proposal and review submissions in order to:

Recruit an external researcher to conduct the provincial utilization review of the air ambulance service. (Rec. 2) short term (1–2 months)

C. Assist Air Ambulance staff in addressing the following recommendations:

Meet with Ministry of Education and Training and with Seneca College to address problems with the Aero-Medical Transport Program. (Rec. 14) short term (1–2 months)

Convene discussions with Ministry of Education and Training to review the Air Ambulance ALS education program for inclusion in community colleges. (Rec. 16) short term (1–2 months)

Initiate discussions with the Northern Health Travel Grant Program regarding the transfer of priority 1 and priority 2 patients. (Rec. 23) short term (2–3 months)

Convene discussions with the Human Resources Branch in order to streamline the recruitment process and address language requirements. (Rec. 17) short term (2–4 months)

Act to settle the grievance outstanding since 1985 regarding reclassification of paramedics. (Rec. 18) short term (2–4 months)

Review and revise Air Ambulance policies and procedures to ensure timely resolution of issues between and among stakeholders. (Rec. 28) long term (12–18 months)

D. Direct the relevant recommendations to the appropriate committee for action.

JOINT COMMITTEE

Purpose

To advise the Emergency Health Services Branch on Air Ambulance policy.

Objectives

To receive reports from the air carriers' and health care committees.

To review policy initiatives developed by Air Ambulance staff.

To review utilization data routinely.

To oversee the development and implementation of the Air Ambulance strategic plan.

To recommend areas for policy development.

To monitor the establishment of strategies for effectively communicating information and changes to all stakeholders.

To address recommendations of this report, as appropriate.

Proposed Membership

Chair, to be appointed by the ADM

Manager of Air Ambulance Section (or designate)

Emergency Health Services medical consultant

Each of the following groups to select/elect one representative: base hospital physicians, air ALS attendants, dedicated fixed-wing carriers, dedicated rotary-wing carriers, chartered carriers.

Recommendations Appropriate for Joint Committee

- | | | |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Rec. 15 | Approve as standard policy that each dedicated aircraft have two advanced life support attendants 24 hours a day. For the transition period, put in place the recommended staff complement. Communicate this policy to stakeholders. | short term (2–3 months) |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|

Rec. 6	Approve as standard policy that consultation with appropriate physicians take place in every instance where there is conflict related to which one of two critically ill patients needs to be moved first. Communicate this policy to stakeholders.	short term (2–3 months)
Rec. 3	Oversee the establishment of the preferred-provider system of contracting for chartered carriers based on the results of the provincial utilization review and with input from the air carriers' and health care committees.	long term (12–18 months)*
Rec. 7	Oversee the external review of the staff positions in the Medical Air Transport Centre.	medium term (6–12 months)
Rec. 25	With input from committees, staff, providers, and appropriate others, develop a vision, a mission, short- and long-term objectives, priorities, and strategies for the Air Ambulance Section. Communicate this information to all stakeholders.	long term (12–18 months)*
Rec. 26	Improve coordination of the air and land ambulance systems both on a micro level and on a macro level.	Ongoing
Rec. 1	Ensure that recommended underlying principles support the management and organization of Air Ambulance services.	Ongoing
Oversee the development of the following education programs:		
Rec. 13	A self-directed training program to assist hospitals in educating staff who function as hospital escorts.	medium term (6–12 months)
Rec. 24	Information documents and programs for the wide range of stakeholders who use the Air Ambulance service.	medium term (6–12 months)

* Recommendations requiring immediate planning and development.

AIR CARRIERS' COMMITTEE

Purpose

To identify and address issues related to aviation contracting, safety, and standards.

Objectives

To develop criteria and standards for inspections.

To advise the joint committee of aircraft concerns and policies.

To receive, from the joint committee, requests for examination of aviation concerns.

To address recommendations of this report, as appropriate.

Proposed Membership

Air Ambulance staff involved in standards and inspections

Health care committee representative

Each of the following groups to select/elect one representative: dedicated fixed-wing carriers, dedicated rotary-wing carriers, chartered carriers, Ministry of Natural Resources, Transport Canada.

Recommendations Appropriate for Air Carriers' Committee

- | | | |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Rec. 9 | Develop an operations plan for systematic audits and inspections. Communicate this plan to stakeholders. | medium term (6–12 months) |
| Rec. 8 | Review and assess standards, equipment, and other requirements in terms of being reasonable, necessary, and beneficial for effective and safe patient transfers. Communicate this information to stakeholders. | medium term for preliminary review and assessment (6–12 months), and as an ongoing activity. |

HEALTH CARE COMMITTEE

Purpose

To develop and monitor practices and procedures related to medical quality assurance.

Objectives

To develop and monitor standards for air escorts and medical equipment.

To advise the joint committee of health care concerns and policies.

To receive, from the joint committee, requests for examination of health care concerns.

To address recommendations of this report, as appropriate.

Proposed Membership

Air Ambulance staff member

Emergency Health Services medical consultant

Each of the following groups to select/elect one representative: base hospital physicians, sending hospitals, air ALS attendants, air carriers, Medical Air Transport Centre staff.

Recommendations Appropriate for Health Care Committee

- | | | |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Rec. 11 | Modify the title of each air escort to reflect the level of training he or she has. Communicate this information to stakeholders. | short term (2–3 months) |
| Rec. 12 | Develop a clear job description of the role of the cabin medical attendant. Communicate this role to stakeholders. | medium term (6–12 months) |
| Rec. 19 | Review medical equipment with the purpose of developing a definitive list for both dedicated and chartered air carriers. Communicate this information to stakeholders. | medium term (6–12 months),
and as an ongoing activity |

- | | | |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Rec. 20 | Develop standardized information forms which clearly stipulate the information that will be asked by the call taker when a transfer is being arranged, and revise the air ambulance call report. Communicate this information to stakeholders. | medium term (6–12 months) |
| Rec. 21 | Review and assess the current system for coding patients. Communicate the revised system to stakeholders. | medium term (6–12 months) |
| Rec. 5 | With the completion of the revised coding system, communicate that it is the responsibility of the sending physician to determine the severity of the patient's condition. Educate users about the revised coding system. | medium term (6–12 months) |
| Rec. 22 | Integrate the preferred-provider system as part of the base hospital system. | long term (12–18 months),*
and as an ongoing activity. |

* Recommendations requiring immediate planning and development.

Chapter 10

Consolidated Recommendations

Chapter 1 Background

The Committee recommends that:

1. Underlying principles that support the management and organization of air ambulance services include:
 - matching service to needs;
 - solving problems with the aid of data and research;
 - using formal mechanisms to seek input from, and to communicate with, all stakeholders;
 - fostering a team approach among staff, health care providers, and air carriers with the common goal of providing a quality service; and
 - monitoring, evaluating, and improving practices and processes on an ongoing basis.

Chapter 3 Organization of the Service

The Committee recommends that:

2. An external provincial utilization review be conducted of the air ambulance service with the purpose of obtaining information to inform decisions and guide policy development. This review should examine such indicators as volume of transfers, patient codes, patient flow, physician transfer patterns, and costing. Critical issues that need to be addressed using such data include: criteria for dedicated air ambulance bases; the need for additional dedicated bases; regional boundaries for a chartered air carrier service; and the feasibility of the multi patient transfer unit.

Chapter 4 Aircraft Contracting

The Committee recommends that:

3. The standing offer agreement for chartered carriers be replaced by a method of contracting which encompasses the premise that selected carriers are awarded rights as the preferred provider of service for a region. This model should be characterized by the establishment of regional service areas; a request for proposal process; selection that is value based; a provision for backup; fee-for-service payment; a preliminary two-year contract period; standardized medical equipment; and a program evaluation to monitor and assess such items as user satisfaction, number and size of regions, and length of contract period. Full implementation of this method of contracting should be within 18 months of the completion of the proposed external provincial review (Recommendation 2). The stages in this transition period should be determined in consultation with chartered carriers.
4. An air carriers' committee be established, made up of representatives from dedicated and chartered carriers, Transport Canada, the Ministry of Natural Resources, Air Ambulance staff and management, and appropriate health personnel. The committee should meet at least twice a year to raise issues of concern; to discuss areas for improvement; and to suggest changes in the areas of contracting, safety, and standards.

Chapter 5 Dispatch

The Committee recommends that:

5. It be the responsibility of the sending physician, or of his or her delegate, to determine the severity of the patient's condition.
6. Consultation with appropriate physicians (sending, receiving, base, Emergency Health Services Branch medical consultant) should take place in every instance where there is conflict related to which one of two critically ill patients needs to be moved first.
7. In response to the changes proposed in Recommendation 3 (preferred provider) and Recommendation 5 (severity of patient), an external review be conducted of the positions in the Medical Air Transport Centre. This review should evaluate the purpose, roles, responsibilities, training, and daily activities of staff. Front-line staff should be supported with additional training, where necessary, in order to operate more effectively and efficiently.

Chapter 6 Standards and Inspections—Aviation Quality Control

The Committee recommends that:

8. Standards, equipment, and other requirements be routinely reviewed and assessed by the proposed air carriers' committee (Recommendation 4) in terms of being reasonable, necessary, and beneficial for effective and safe patient transfers. The outcome of these reviews should be defensible under public scrutiny.

9. An operations plan to conduct systematic audits and inspections be established. As part of this plan, procedures should be clearly stipulated regarding safety management; aircraft and heliport audits and inspections; the roles of the Ministry of Health, Transport Canada, and the Ministry of Natural Resources; communication among these parties; training for audits and inspections; monitoring of incidents; and the standardizing of a list of infractions and their consequences. These procedures should be communicated to all carriers and to others, as appropriate.

Chapter 7 Patient Care and Quality Assurance

The Committee recommends that:

10. A health care committee be established, to be made up of representatives from base and sending hospitals, Air Ambulance management and staff (air ALS attendants and Medical Air Transport Centre personnel), and air carriers. This committee should meet at least twice a year to discuss issues of concern and areas for ongoing improvement in the practices and procedures involving quality assurance.
11. The title of each air escort be modified to reflect the level of training he or she has. Such a change would make it easier for clients to understand the level of care they can expect from each type of escort. Any change in title should be made in consultation with the land ambulance service.

12. The proposed health care committee (Recommendation 10) develop a clear job description of the role of the cabin medical attendant, taking into consideration the accountability of both the hospital and the physician for patient care.
13. A self-directed training program be developed to assist hospitals in educating staff who function as hospital escorts. The program should be designed jointly by representatives of hospitals, the Ministry, and air ambulance bases.
14. Appropriate individuals at the Ministry of Health and the Ministry of Education and Training meet with representatives of Seneca College to address the problems with the Aero-Medical Transport Program that have been identified and to develop strategies for resolving them.
15. As standard practice, each dedicated aircraft have two advanced life support attendants 24 hours a day. Standards for the transition period should be put into place until the recommended standard is achieved. The transition period should be no longer than one year from the acceptance of this recommendation. For the duration of this transition period, an acceptable dedicated crew should include one advanced life support attendant, one basic life support attendant, and one hospital medical escort as an additional resource if the patient's condition warrants.
16. The Ministry of Health divest itself of the responsibility of training air advanced life support attendants (paramedics). Discussions should begin immediately with appropriate individuals from the Ministry of Education and Training to review program requirements and standards for the air ambulance ALS education program for inclusion in community colleges. The advisory committee to govern the program and monitor its success should include, among other appropriate members, practising air ambulance paramedics, and physicians with aeromedical experience. Relevant courses being offered by educational institutions (for example, for the training of land ambulance attendants and other health care providers) should be assessed for their appropriateness to the ALS program. Consideration should be given to encouraging laid-off health care workers to undergo this training. Financial assistance may be obtained from the Ministry's Health Sector Training Adjustment Panel.
17. The Human Resources Branch recruitment process be streamlined. Staff from the Office of Francophone Affairs, the French Language Health Services Office, and the Emergency Health Services Branch should meet to address the difficulties that French-language requirements may present to recruiting sufficient numbers of staff. Serious consideration should also be given to regional language needs (for example, Oji-Cree).
18. The Ministry of Health and the Ontario Public Service Employees Union act immediately to settle the grievance outstanding since 1985 regarding reclassification of paramedics.

19. Medical equipment be reviewed by the proposed health care committee (Recommendation 10), with the purpose of developing a definitive list for both dedicated and chartered air carriers. This information should be reviewed annually in order to incorporate advances in medical technology. It should be communicated to users, with updates sent out as necessary.
20. Standardized information forms be developed by the proposed health care committee (Recommendation 10). The information requested should be relevant to the task being conducted and should not replicate information collected elsewhere. Forms should include a standardized document which clearly stipulates the information that will be asked by the call taker when a transfer is being arranged, and a revised air ambulance call report. These forms should be distributed to all clients who arrange air ambulance transfers.
21. The current system for coding patients be reviewed and assessed by the proposed health care committee (Recommendation 10) in terms of the system's sensitivity to the condition of the patient, the length of time the patient can wait before a transfer occurs, and the adequacy of resources available to meet the needs of the patient. Users of this revised priority system for interfacility transfers should be educated about its proper use.
22. The preferred-provider system become an integral part of the base hospital system in order to ensure the maintenance and monitoring of quality transfers.

Chapter 8 Other Areas for Review

The Committee recommends that:

23. Discussions be initiated immediately with the Northern Health Travel Grant Program in order to identify duplications and responsibilities in relation to transferring priority 1 and priority 2 patients.
24. Information documents and programs be developed for the wide range of stakeholders who use the air ambulance service. Documents should meet the information needs of the intended stakeholder. Programs should communicate information through a variety of innovative methods.

Chapter 9 Conclusion—Critical Success Factors

The Committee recommends that:

25. A clear vision and mission, and clear short- and long-term objectives, priorities, and strategies, be developed for the Air Ambulance Section, recognizing that the primary purpose of the air ambulance service is health care. This information should be communicated to all stakeholders.
26. Coordination of the air and land ambulance systems be improved both on a micro level (ongoing communications, daily service, terminology) and on a macro level (organizational linkages).
27. A joint committee be established, made up of representatives from Air Ambulance staff, base hospitals, air ALS attendants, and dedicated and chartered carriers. This committee should meet at least twice a year

with the purpose of advising the Ministry of Health on Air Ambulance policy. The proposed air carriers' committee (Recommendation 4) and health care committee (Recommendation 10) should report to this joint committee.

28. Management of the Air Ambulance Section review and revise its policies and procedures to ensure that mechanisms exist to identify areas of concern held by staff, health care providers, air carriers, and users of the service; to address these concerns in a responsible and timely manner; to hold individuals accountable for their actions; to communicate promptly the results of decisions to appropriate parties; and to monitor issues over time in order to determine whether broader policy changes must be made.

Appendices

Appendix A

93/nr-028

Contact: David Jensen, Toronto
Communications and Information Branch
Phone: (416) 327-4364

HEALTH MINISTER ANNOUNCES REVIEW OF AIR AMBULANCE SYSTEM

TORONTO, May 11 — Health Minister Ruth Grier today announced an independent review of Ontario's air ambulance system.

"During the past months and following the death of 15-year-old Peter Gervais of Sault Ste. Marie, concerns have been raised about air ambulance contracting and safety procedures, as well as a number of issues relating to patient welfare," Mrs. Grier said. "We must ensure that we have the safest, most reliable system for transporting patients by air."

The review, which will begin immediately, is to be conducted by a committee of people from the aviation industry, labor, and government agencies involved in aviation.

Gail Donner, PhD, a registered nurse and an associate professor at the University of Toronto's Faculty of Nursing, will head the review. Ms. Donner is also a former executive director of the Registered Nurses' Association of Ontario.

The committee will have a broad mandate to advise the minister, concerning the provision of safe and timely air ambulance transportation. It will consider among other things:

- the standards established and service levels provided by the ministry's Air Ambulance Section for all patients, particularly those who are critically ill;
- the manner by which the Air Ambulance Section monitors the compliance of contracted carriers with established air transport standards and quality controls;
- the way in which the Air Ambulance Section maintains a close partnership with contracted carriers to ensure improvement in the safety, efficiency and user satisfaction of the system;
- the methods used to select companies and organizations for contracting air ambulance transportation;
- the role of Transport Canada in the assurance of air transport safety; and
- the safety record of the air ambulance system between 1981 and 1993.

Att: Air Ambulance Fact Sheet

version française disponible

Appendix B

Committee Members and Review Staff

Gail Donner

Chair
Associate Professor
Faculty of Nursing
University of Toronto

Rob Blakely

Vice President, Operations
Eastern Division
Canadian Helicopters
Representative of dedicated air carriers

Patricia Cliche

Director of Emergency Services
Emergency Department
North Bay Civic Hospital
Representative of the Provincial Emergency
Health Services Advisory Committee

Adam Keller

President
Samaritan Air Ambulance
Representative of the Association of Ontario
Air Ambulance Operators

Brad Martin

Director of Operations
Bearskin Airlines
Representative of the Association of Ontario
Air Ambulance Operators

Garrett B. Smith

Manager
Executive Flight/Southern Operations
Representative of the Ministry of Natural
Resources

Michael R. Stephenson

Superintendent
Air Carrier Certification
Representative of the Department of Transport

Darryl Taylor

Air Ambulance Attendant
Timmins Air Base
Representative of the Ontario Public Service
Employees Union

Joann Trypuc

Project Manager
Independent Consultant

Marisa Petrossi

Review Secretary

**1. Submissions, Presentations, Visits,
Meetings, and Interviews**

Written Submissions

Awood Air Ltd.

Andrew Galloway
Chief Pilot

John MacArthur, EMCA
Cabin Medical Attendant
Thunder Bay

David J. Bain, RN, EMCA
Etobicoke

**Belleville Central Ambulance Communication
Centre**

Gerry Fraser
Manager
Belleville

The Belleville General Hospital

Bruce E. Morgan, MD
Medical Director
Belleville

Beverley Townsend
Director of Patient Services
Belleville

BonAir Aviation Ltd.

J.P.R. (Ron) Comeault
President/CEO
Sault Ste. Marie

Brockville General Hospital

Bonnie Rogers
Unit Co-ordinator
Emergency
Brockville

Canadian Regional Airlines Ltd.

Peter Campbell
Manager
Regional Routes
Calgary, Alberta

Canadian Union of Public Employees

Jeff Wykes
Secretary
Keewatin

**Central West Emergency Health Services
Advisory Committee**

Ernest Jodoin
Area Emergency Health Services Planning
Coordinator
Hamilton

Chedoke-McMaster Hospital

Mark Preece, MD
Medical Director
Critical Care Transport Team
Hamilton

Marti Wisniewski, RN, CCTU
Hamilton

Children's Hospital of Eastern Ontario

Jocelyn Lawrence, RN, BScN
Nursing Unit Administrator
Neonatal Intensive Care Unit
Ottawa

City Ambulance Service of Quinte Ltd.

Allan Morton
Operations Manager
Belleville

Corporation of the Town of Kapuskasing

Rene Piché
Mayor
Kapuskasing

* We would like to extend our thanks to all those who participated in our work, including those who participated anonymously.

Dufferin-Caledon Health Care Corporation

Lynn Johnston, RN
Manager
Outpatient/Ambulance Services
Orangeville

Greater Niagara General Hospital

Lori Luinstra
ALS Director
Niagara Falls

Haldimand-Norfolk District Health Council

Ken R. Harman
Executive Director
Townsend

**Hamilton Ambulance Communications
Centre**

Paul MacDonnell
Acting Manager

Hamilton Civic Hospitals

Hamilton General Division
Beverley Robertson
Assistant Director of Nursing
Hamilton

Hamilton General Hospital

John R. Hewson, MD, CM, MSc, FRCP(C)
Chairman
Health Services Advisory Committee
Hamilton

**Hastings and Prince Edward Counties District
Health Council**

Steve Elson
Executive Director
Belleville

Hawkesbury and District General Hospital

Michel P. Lalond
President and CEO
Hawkesbury

The Hospital for Sick Children

John Edmonds, MB, BS, FRCP(C)
Assistant Director
Department of Critical Care
Paediatric Critical Care Unit
Toronto

D. Anna Jarvis, MB, BS, FRCP(C)
Director
Division of Emergency Services
Toronto

D. E. Wesson, MD, FRCS(C)
Director
Trauma Program
Toronto

Hotel Dieu Hospital

Hugh C. Graham
Executive Director
Kingston

Kingston General Hospital

Peter Glynn, PhD
President and Chief Executive Officer
Kingston

Kirkland and District Hospital

Pamela Seitz, RN, MScN
Assistant Executive Director
Patient Services
Kirkland

Kitchener-Waterloo Hospital

Ron Noble, FCCHSE
Vice President
Operations and Professional Services
Kitchener

Susan Koenig

London

The Lady Dunn General Hospital

Frank E. Buerkle
Chief Executive Officer
Wawa

Lake of the Woods District Hospital

Joann Norlen
Assistant Executive Director
Patient Care Services
Kenora

Pauline Lauzon, RN, OHN

Swastika

Allan McGregor

Carleton Place

McKellar General Hospital

Donna Otto
Secretary
Social Work Department
Thunder Bay

McMaster University Medical Centre

A. Freitag, MD, FRCP(C)
Pediatric ICU Director
Hamilton

Mattawa General Hospital

Sister Nicole Guay
Director, Patient Care Services
Chairperson—Emergency Services Committee
Mattawa

Memorial Hospital—Bowmanville

Benjamin Fuller, MD
Chairman
Emergency Services Committee
Bowmanville

Mount Sinai Hospital

Charlotte Campbell
Director
Corporate Planning
Toronto

North Bay Civic Hospital

Mark Hurst
Executive Director
North Bay

North Hastings District Hospital

Carolyn Brown, MD
Medical Director
Brancroft

**Northwest Area Emergency Health Services
Committee**

Les Johnson
Chairperson
Thunder Bay

Notre-Dame Hospital

Jake Rempel
Manager
Ambulance Department
Hearst

Maurice O'Neil, BSc (HK) MD

Collingwood

Ontario Nurses' Association

Ina Caissey, RN
President
Toronto

Oshawa General Hospital

J. William C. Lewis
Executive Vice-President
Oshawa

Ottawa General Hospital

Kazimiera Adamowski
Social Work Department
Ottawa

Percy Pilatzke

Paramedic
Bandage #3 Thunder Bay
Thunder Bay

Port Hope and District Hospital

Jessie G. Mutter
Assistant Executive Director
Patient Services
Port Hope

Prince Edward County Memorial Hospital

Leslie B. Summers
Associate Base Hospital Director
PECMH
Picton

The Respiratory Therapy Society of Ontario

Toronto

K.E. Rogers, MD, FRCS(C)

Armstrong

Ross Memorial Hospital

Roger R. Cook, RN, BScN, MEd, CHE
Assistant Executive Director
Patient Care
Lindsay

Sarnia General Hospital

Loretta Hodgin
Assistant Executive Director
Patient Care
Sarnia

Sault College of Applied Arts and Technology

Joe Thompson
Aviation Technology
Sault Ste. Marie

St. Joseph's General Hospital

Patricia M. Maxwell
Assistant Executive Director
Patient Care Services
Elliot Lake

St. Joseph's General Hospital of North Bay Inc.

Rita Kovacs
Executive Assistant
Patient Services
North Bay

Temiskaming Hospital

Wayne Coveyduck
Executive Director
New Liskeard

Tri-Town and District Chamber of Commerce

Herb Baxter
Chairman
Transportation Committee
New Liskeard

University Hospital

R.K. Stuart, MD, FRCP(C)
Vice-President
Medical Services
London

The West Nipissing General Hospital

Michelle Remillard
Assistant Executive Director
Sturgeon Falls

Jan Zepotoczny Berger

Nursing Consultant
Toronto

Oral Presentations (in person or by telephone)

An asterisk (*) denotes a written submission was also received.

Scott Andrews

Flight Paramedic
(on secondment to OPSEU)

Naomi Blundell

Public Relations Officer
Kingston
Canadian Association of Aero-Medical
Transportation Systems*

Gail Courneyea, RN*

Angels of Flight

Code 4 Medical Transport Services Inc.*

Shawn Kenny, RRT
President
Guelph

Jim Fraser

Foreman
Gervais Inquest

Peter Lane, MD

Medical Director
Trauma Services
Victoria Hospital
London

Provincial Emergency Health Services

Advisory Committee

Eugene L. Dagnone, MD
Chair

Dennis A. Psutka, MD

Associate Professor
McMaster University

Quinte Ambulance

Dr. Bruce Morgan
Chair

Barry Smith, MD, FRCP(C)

Head
Division of Neonatology
The Hospital for Sick Children

Gene Swimmer

Director
School of Administration
Ottawa
Carleton University

University of Toronto

Helicopter Air Ambulance Simulator

Research Program

Charles J. Lumsden, PhD
Professor

Audrius B. Stundzia, PhD

Project Manager

*Committee Visits to Dedicated Air Ambulance
Locations*

Thunder Bay, October 4, 1993

McKellar General Hospital

Tara Friske
Program Manager

Ron Saddington

President

Terry N.W. Trusdale, MB, ChB, DObst, RCOG,
CCFP

Medical Director
Air Paramedic Program

Manitouwadge General Hospital

Jocelyn Bourgoin

Manager

Manitouwadge Ambulance Service

Thunder Bay Air Ambulance Base

William Graham

Area Manager

Rob Plummer

Air Paramedic

Sioux Lookout, October 5, 1993

Sioux Lookout Hospital

Sioux Lookout Air Ambulance Base

Charles Abela

District Manager

Jude Andrews

Air Paramedic

Rob Best

Land/Air Dispatcher

Joan Clarke

Air Paramedic

Harry Kondra

Land Ambulance Manager

Ron Laverty

Air Paramedic

Mike Loesser

Paramedic Coordinator

Jon Morgan, MD

Medical Director

Sue Williams, EMCA

Sioux Lookout Zone Hospital

Sam Appavoo, MD

Anne Cameron

Stewart Harris, MD

Graham Hendry, MD

Marjory Johnson

Florence Tarrant

Tim Wehner, MD

Toronto, November 1, 1993

Sunnybrook Health Science Centre

Dr. Andrew McDonald

Medical Director

Barbara Mason

Program Director

Toronto Air Ambulance Base Flight

Paramedics

Scott Andrews

Robert F. Smith

Rob Theriault

Sudbury, November 22, 1993

Laurentian Hospital

R.M. Bergh, MD

Chief of Staff

Elaine Birmingham

Consultant

Clinical Services

Maria Casas

Acting Director, ACU

Wendy Curuliak

Director

Pediatrics

Jane Keown
Director
Medicine

Nicole Shank
Director
Orthopedics

Marilyn Wilson
Supervisor
Communications

Valerie Wilson
Director, ICU

Sudbury Air Ambulance Base
Tim Beadman
District Manager

Mike Steinman
Flight Paramedic

Sudbury General Hospital
Gary Bota, MD
Medical Director
Emergency Department

Eugene Pommier, MD
Medical Director
Air Base Hospital Program

Angela Zubac
Director
Base Hospital Program

Sudbury Memorial Hospital
Chantal Desjardins
Coordinator
Respiratory Therapy

Susie Perry
Director
Patient Care Standards

Marion Tate
Discharge Planner

Timmins, November 23, 1993

Timmins Air Ambulance Base
Air Ambulance Escorts:

Marc Bechard
Shelley Bond
Steve Hanley
Andrew Hunt
Alan Jackson
Stan Morrow
Chris Robertson
Mary Scherpenberg

**Timmins and District Hospital Regional
Utilization Meeting**

Anson General Hospital (Iroquois Falls)
Bingham Memorial Hospital (Matheson)
Chapleau General Hospital
Englehart and District Hospital
James Bay General Hospital (Moosonee)
Kirkland and District Hospital
Lady Minto Hospital (Cochrane)
Moose Factory General Hospital
Notre Dame Hospital (Hearst)
Porcupine Continuing Care Centre (Timmins)
Sensenbrenner Hospital (Kapuskasing)
Smooth Rock Falls Hospital
Temiskaming Hospital (New Liskeard)
Timmins and District Hospital

Public Meetings

An asterisk (*) denotes a written submission was also received.

Thunder Bay, October 4, 1993

Dawn Bubar, RT

Carmen Moonias-Lavoie, RN

Port Arthur General Hospital
Discharge planner

Don Stokes
Paramedic

Sioux Lookout, October 5, 1993

Bearskin Airlines
Harvey Friesen
President

Jim Bennett
Chief pilot

Don Melvin

Sue Williams

Sault Ste. Marie, October 20, 1993

Mary Gervais*

Mark Lowell
Ambulance attendant

Earl Turner

Robert Weir
Ambulance attendant

Sudbury, November 22, 1993

Bob Mackay
Pilot

Mark Raston

Ambulance attendant

St. Joseph's Hospital (Elliot Lake)

Pat Maxwell
Director
Nursing

Voyageur Airways*

Will Baker
Dave Dellandrea
Max Shapiro

Luke Williams

Timmins, November 23, 1993

Mrs. Guillemette

Ray Keiski

Phil Kilbertus
Planner
District Health Council

Patient Action (written submission only)
Ginette Lafond

Dick Racey*

Other Meetings

Sault Ste. Marie, October 20, 1993

Plummer Memorial Public Hospital and Sault Ste. Marie General Hospital

David Boyle, MD
Chief
Anaesthesia

Marylyn Carriere
Assistant Executive Director
Patient Services

David Crookston, MD
Chief
Family and Emergency Medicine

Jim Dalglish
Chief Operating Officer

Sherri-Jo King
Management Clinical Specialist
NICU/OBS

Karen McFadden
Nurse Manager
Emergency Department

Robert Maloney, MD
Chair
Critical Care Transport Working Group
NEAEHSCC

Tammy Maszczakiewicz, RN
Ambulatory Care Unit

Laura Weir, RN
Intensive Care Unit

Sault-Algoma Ambulance Service
Eric Barton
Director

Tom Johns
Assistant Director

Wunnumin Lake, October 6, 1993

Wunnumin Lake Community
Dean Cromarty
Deputy Chief

Tom McKay

James Mamakwa

Zak Mamakwa

Peter Martin
Elder

Gary Strickland

Edith Winnepetonga

Simon Winnepetonga
Chief

Kingfisher Lake First Nation
Joyce Begg

Henry McKay
Deputy Chief

Sioux Lookout First Nations Health Authority
Janet Gordon
Jessie Sofea

Wunnumin Lake Nursing Station
Mark Quigg, MD
Elizabeth Hutchinson-Carroll, RN
Maureen Weir, RN

Presentation to Committee at Its Request

Walter Lyle
Acting Operating Manager
Medical Air Transport Centre

Marie Willey
Senior Flight Follower
Medical Air Transport Centre

Ministry of Health Staff Interviews

Emergency Health Services Branch (EHS)

Graham Brand
Director

Air Ambulance Section (EHS)

Hank Brown
Manager

Mark Hull
Manager
Medical Air Transport Centre

Al Hutton
Acting Administrator
Aircraft Contracting

Eric Mosher
Contracts/Auditor/Inspector

Ken Murray
Administrator
Communications and Facilities

Wayne Stott
Administrator
Dedicated Operations

Emergency Health Programs (EHS)

Dennis Brown
Project Manager

Al Erlenbusch
Senior Manager

Roslyn Klaiman
Project Officer

Marion Lyver, MD
Medical Consultant

Yau Yip
Project Officer

Audit Branch, Ministry of Health

Ron Smith
Management Auditor

*Northern Health Programs and Planning Branch,
Ministry of Health*

Eileen Mahood
Director

2. Overview of Concerns

A wide range of issues was raised in the consultations. These issues are summarized in the following table and list of concerns. A staff profile of issues is presented separately.

The frequency with which each issue was raised is presented as a percentage. (For example, of all the comments made, 23 percent were about dispatch and 17 percent about lack of information/education.)

Issues are also presented according to whether they were raised by associations, air carriers, consumers, or providers. (For example, of all the comments made by associations, 17 percent were about dispatch and 8 percent about lack of information/education.)

Summary of Issues

Issue	% of Total Comments	Issues Raised by Each Group (%)			
		Associations	Carriers	Consumers	Providers
Dispatch	23	17	11	31	24
Lack of Information/ Education	21	8	17	—	24
Air Escorts	10	21	11	3	10
System Needs to Be More Efficient	9	13	17	17	6
Lack of Standards/ Protocol/Data	7	13	5	—	7
Miscellaneous	6	—	11	3	6
Regional Concerns (North, small, etc.)	6	4	—	24	5
Medical Equipment	4	4	6	—	5
Return of Escorts	4	—	—	4	4
Patient Considerations	3	—	—	7	3
Aircraft Concerns	2	8	—	3	2
Public & Private Ownership	2	12	—	—	1
Health & Safety	1	—	5	—	1
Jurisdictional Problems	1	—	—	4	1
Air Carrier Concerns	1	—	17	4	1
Total (%)	100%	100%	100%	100%	100%
Number of Concerns	451	24	18	29	380

DETAILED LIST OF CONCERNS

Dispatch

- problems with rerouting aircraft, inadequate aircraft and/or incorrect equipment, lack of knowledge about northern circumstances (time zones, distances)
- dispatch policies presenting a problem (100-mile limit, 3 p.m. booking cutoff, 24-hour notice booking, duty time)
- lack of coordination: with land ambulance, with bed availability
- delays resulting from dispatch requesting too much information when timing is critical; process for arranging a flight is too time-consuming
- poor communication: insufficient lead time, not being informed of the time of the flight, not being informed of delays
- inappropriate patient coding by dispatch
- better education/training required for dispatchers
- length of time before air ambulance arrives (too long)

Lack of Information/Education

- lack of knowledge about: information that will be requested to book an air ambulance; protocols, guidelines, regulations; relationship among base hospital physicians, sending hospital physicians, and dispatchers; protocol of when to send an escort; code definitions; air ambulance

attendant qualifications; role of the escort; general knowledge of the system; standard equipment on aircraft

- lack of education: medical staff not aware of effects of an air transfer on the patient; training for medical staff (air program) and cabin medical attendants

Air Escorts

- French-language requirement for paramedics a problem/not necessary
- training of paramedics not appropriate
- lack of paramedics: unclear if the two paramedics will be on dedicated aircraft
- problem with standard and quality of care received on board
- lack of training in handling critically ill children
- need for helmets for paramedics on helicopters
- role of the cabin medical attendant is too diverse, training is not sufficient
- delay caused by reassessment of patient by air ambulance crew

System Needs to Be More Efficient

- helipads not close to hospital; results in a number of stretcher transfers
- proximity of heliport to hospital is too far, resulting in land ambulance being used for transfers (costly)
- inefficient to dispatch land and air differently

- transfer delay is costly to the hospital (because equipment and staff are sent out)
- multi patient transfer unit is not cost effective
- better coordination and education required for the multi patient transfer unit

Lack of Standards/Protocol/Data

- lack of audits, evaluation, statistics re air ambulance
- lack of policy regarding use of land and air ambulance; inappropriate use of air; use inconsistent; air too costly

Miscellaneous

- eliminate reimbursement for repatriation services
- legislation does not address meaning of medically necessary
- Ministry of Health management structure not efficient

Regional Concerns

- lack of service to rural hospitals
- lack of resources in the North, including medical staff (physicians/nurses)
- lack of helipads in the North
- float planes not available on the standing offer agreement—needed in the North
- lack of weather-reporting systems in the North

Medical Equipment

- lack of standardization of medical equipment among hospital, air, and land ambulance
- problems with medical equipment on aircraft (not available, not working)
- process of selecting medical equipment for charter aircraft not rigorous
- unsafe cabin environment due to ill-fitting equipment
- lighter equipment not always appropriate
- standard stretcher not available

Return of Escorts

- delays with staff and/or equipment getting back to hospital

Patient Considerations

- patient comfort—loading and unloading on open runways (cold), aircraft not heated
- noise level in helicopter too loud
- lack of space for patient care on aircraft

Aircraft Concerns

- difficulty accessing the system—air ambulance unavailable
- aircraft not appropriate for type of equipment needed on board
- helicopter's inability to land on highways
- problem with aircraft flying too low

Public and Private Ownership

- combination of public and private ownership a problem
- different levels of care due to variety of ownership

Health and Safety

- problem with loading and unloading patients
- health and safety issues (e.g., lifting of heavy equipment)

Jurisdictional Problems

- interprovincial transfers cause delays

Air Carrier Concerns

- standing offer agreement process inappropriate
- perceived favouritism of certain carriers
- Ministry of Health reimbursement policy with carriers too long

OVERVIEW OF ISSUES RAISED BY STAFF

Air Ambulance staff presented a wide range of opinions and observations. Issues are listed in order of frequency mentioned.

- Need for more staff in the Air Ambulance Section in general and in the dispatch centre particularly. (Noted frequently, although this view not held by all staff.)
- Problems with paramedics (roles, capabilities, supply, training).
- Contracting for chartered carriers presents problems.
- More attention needs to be paid to educating users and training staff.
- Increase information and communication to users.
- Quality assurance, especially in chartered carrier system, needs to be improved.
- Unclear role of sending physicians in terms of their responsibilities; need to educate them to use the system properly.
- Problems with bumping the code (i.e., inflating severity of patient to get transfer more quickly).
- Need for more inspectors for aviation quality control.
- Emergency Health Services should report to the Institutions Branch.
- Need for more dedicated bases.
- Repatriation should not be covered by the government.
- Public has high expectations of the service.
- Need to restore public confidence in the system.
- Too much emphasis on aviation (role of government in aviation needs to be reviewed).
- All calls should come directly to Medical Air Transport Centre rather than to land ambulance system.
- Aeromedical program a problem.
- Policies are not consistently applied.
- Government of Ontario Temps are a problem; do not have training.
- More audits of the service are needed.

Role of the Air Ambulance Service

Alberta

To transport patients in urgent life-threatening situations and, when they cannot be transferred by other means, in urgent non-life-threatening situations. To transport medical equipment to patients in non-urgent, non-life-threatening situations.

British Columbia

To move patients by air when it is either medically desirable or economically advisable.

Manitoba

To provide exemplary health care for patients during all phases of acute interfacility air transportation.

New Brunswick

To provide emergency transportation for patients where care and services cannot be provided within the province. Air transportation must be cost effective and feasible for the patient's condition.

Newfoundland

To provide emergency and urgent transportation in response to the medical needs of the patient.

Nova Scotia

To transport emergency patients, transplant patients, and organs.

Prince Edward Island

Not applicable (N/A)

Quebec

To transfer urgent unstable patients to specialized and highly specialized hospitals in Quebec City and Montreal.

Saskatchewan

To provide transportation for residents requiring emergency medical care.

Type of Operation

Alberta

Dedicated and charter

British Columbia

Dedicated and charter

Manitoba

Scheduled commercial airlines used to transport stable patients (89%); charter service used to transport urgent and emergency patients (9%); dedicated Lifelight government aircraft transport code 1 and 2 patients (2%).

New Brunswick

Tender for service

Newfoundland

Dedicated (70%) and charter (30%)

Nova Scotia

Search and Rescue in south N.S.

Prince Edward Island

Air Search and Rescue

Quebec

Dedicated

Saskatchewan

Dedicated and charter

Method of Contracting for Services

Alberta

Request for proposal and standing offer agreement.

British Columbia

Dedicated aircraft owned by government.
Charters selected by request for proposal or standing offer agreement.

Manitoba

Dedicated Lifelight aircraft owned by government. Charters selected based on verified performance.

New Brunswick

- Nova Scotia Search and Rescue
- Quebec Air Ambulance
- Private service provided by Montreal and Nova Scotia

Newfoundland

Standing offer agreement. Also, aircraft owned by government.

Nova Scotia

Special arrangement with Cougar Helicopter.

Prince Edward Island

Nova Scotia Air Search and Rescue.

Quebec

Aircraft owned by government.

Saskatchewan

Dedicated aircraft owned by government. Charters used on an as-required rotational basis, depending on where they are coming from and patient requirements.

Range of Operation

Alberta

The province of Alberta

British Columbia

The province of British Columbia

Manitoba

The province of Manitoba outside an 80-mile/130 km radius of Winnipeg

New Brunswick

The province of New Brunswick

Newfoundland

The province of Newfoundland and Labrador

Nova Scotia

The province of Nova Scotia

Prince Edward Island

Information not available

Quebec

The province of Quebec, including the Iles de la Madeleine and northern New Brunswick

Saskatchewan

The province of Saskatchewan

Staffing on Aircraft

Alberta

2 pilots; 2 ALS attendants (preferred)

British Columbia

2 pilots; escort must be provided on every flight (usually a government employee who is a paramedic or nurse)

Manitoba

2 pilots; 1 flight nurse (60% of flights) and 1 physician or team (30% of flights)

New Brunswick

1 pilot and 1 co-pilot; nurse or technician

Newfoundland

1 pilot and 1 co-pilot; 1–3 escorts provided by referring hospital

Nova Scotia

2 pilots; flight nurse or team

Prince Edward Island

N/A

Quebec

2 pilots; 1 physician and 1 flight nurse

Saskatchewan

1 pilot (pilot's discretion used if second pilot required); escort always provided—whatever is required is sent (e.g., critical care nurse, paramedic, team)

New Brunswick

Nurse or technician.

Newfoundland

Referring hospital provides escorts.

Nova Scotia

In-house training provided by hospital.

Prince Edward Island

N/A

Quebec

Nurses take training in emergency care, neonatal care, aviation medicine, air operations orientation, evacuation, etc.

Saskatchewan

Orientation program, flight medical training, ground school, survival course.

Training of Escorts**Alberta**

Mandatory orientation training every 6 months (half-day per session).

British Columbia

Paramedic or nurse.

Manitoba

Nurses take a 280-hour training program; aeronautical training including Instrument Flight Rules procedures, safety equipment, survival; 8–10 weeks of orientation and indoctrination, including road attendant's course; ICU program. Physicians and teams take a 2-day orientation, including aircraft safety; baromedical altitude; effects of speed, acceleration and deceleration; aeronautical training, including Instrument Flight Rules procedures, safety equipment, survival.

Method of Arranging Transfers**Alberta**

A physician decides that an air ambulance is required. The local hospital calls one of two private dispatch centres, which arranges for the aircraft and escort.

Priority codes are not used for patients.

British Columbia

The physician and hospital liaise with the dispatch centre, which arranges for an aircraft. Dispatchers control and coordinate movement of ground, air, and maritime ambulances; they select the most appropriate mode of transport and the level of attendant. Central dispatch has the final decision on the use of an air ambulance.

Patient and attendants meet at a designated pick-up point.

Patients are coded as follows:

Priority 1 /Red—urgent, no delay

Priority 1 /Green—up to a 4-hour delay

Priority 2—12 hours to transfer

Priority 3—patient return, up to 5 days

Manitoba

The transferring facility identifies the need for service and calls the Lifelight office. The nurse checks the patient data to ensure eligibility for transport and checks with the recommending physician to ensure the patient is ready for transport. The sending hospital receives an authorization number from the Lifelight office and can call any carrier to perform the transport. The pilot and nurse brief each other on requirements, and the pilot is made fully aware of the patient's condition.

A 4-point coding system, from emergency to stable, is used.

New Brunswick

A physician decides if an air ambulance is required. An application form must be filled out, and the sending hospital contacts the receiving hospital.

Priority codes are not used.

Newfoundland

A physician decides if an air ambulance is required. The referring hospital calls the Director of Emergency Health Services, who arranges for an aircraft. After hours, calls are forwarded to a person on call who evaluates

the necessity of the transfer and then telephones the Air Division. Pilots are on standby by pager.

Priority codes are not used. The patient is coded by diagnosis only.

Nova Scotia

A physician or nurse decides if an air ambulance is required. The physician calls the receiving facility for advice and requests a team or escort. The receiving facility calls the aircraft and provides the team or escort.

Priority codes are not used.

Prince Edward Island

The physician in the referring hospital decides if an air ambulance is required. The physician calls the Department of National Defence in Halifax (Rescue Coordinating Centre), where arrangements are made for attendants and ambulances.

Priority codes are not used.

Quebec

A flight physician decides if an air ambulance is required. A call is made to the 24-hour dispatch centre. The screening physician returns the call within 5 minutes and determines the eligibility of the patient. The crew can be paged, and it is ready to launch within one hour. Computerized flight planning provides pilots with all necessary flight data. The pilot is briefed on the patient's condition by the physician.

Priority codes are not used.

Saskatchewan

The physician decides if an air ambulance is required. A call comes to dispatch. A nurse answers the phone and records patient information, destination, etc. The nurse informs the pilot of special requirements.

A 4-point coding system, from emergency to stable, is used.

pays for the transfer and return of patients requiring life-saving medical treatment at another facility.

Manitoba

Patients from outside of the province are responsible for their own air ambulance transportation back to the province. Lifelight office will provide guidance, advice, and names of charter companies.

New Brunswick

The cost of repatriation is covered by the government if the patient is being returned to convalesce in a New Brunswick hospital for a minimum of 2–3 weeks.

Newfoundland

Repatriation is handled on an individual basis. The administration and escort fees are paid by the patient. Other costs are paid by the government, where approved. Emergency Health Services may assist with the land ambulance transfer once the patient has been returned to the airport.

Nova Scotia

Repatriation is covered by the patient or a third-party payer.

Prince Edward Island

The government is the payer of last resort. The patient or a third-party payer is billed directly by the transporting air carrier. The government rarely pays for any repatriation transfers.

Quebec

Repatriation is not covered by the government. All costs are paid by the patient or a third-party payer. The patient is always returned to the referring hospital.

Average Annual Volume of Patients Transferred Per Year*

Alberta	3,600
British Columbia	6,800
Manitoba	705
New Brunswick	55
Newfoundland	700
Nova Scotia	55
Prince Edward Island	4
Quebec	840
Saskatchewan	1,100

Repatriation Policy**Alberta**

Repatriation is not covered by the government. Total costs are paid by the patient or a third-party payer (insurance company). The dispatch centre does not assist in returning patients to the province.

British Columbia

Total costs of repatriation are paid by the patient or a third-party payer. Some insurance companies are not returning patients directly to their home communities. The government is looking at charging insurance companies a fee for the completion of transfers. The government

* As a comparison, Ontario conducts an average of 17,000 transfers per year.

Saskatchewan

Repatriation costs are paid by the government if it is more economical to care for patients in the province. Otherwise, the patient or a third-party payer pays for the aircraft and crew, which are contracted through the dispatch centre. Charter aircraft are usually used.

Appendix E

Background Studies Prepared by the Air Ambulance Review

A series of six background studies was prepared by the Review:

- Aircraft Contracting
- Dispatch
- Organization of the Service
- Patient Care and Quality Assurance
- Standards and Inspections—Aviation Quality Control
- Other Areas for Review

The studies are available through:

Ministry of Health
Health Information Centre
8th Floor
Hepburn Block
80 Grosvenor Street
Toronto, Ontario
M7A 1R3

Telephone (416) 327-4327

Toll-free in Ontario 1-800-268-1153

The hearing impaired may call 1-800-387-5559

Appendix F

Summary of Complaints

Procedures

The Air Ambulance Section provided the following description of how complaints are received and handled:

Complaints are received in writing from patients, hospitals, and the public. The incident reporting system records complaints coming to the Air Ambulance Section and frequently, through the Medical Air Transport Centre (MATC) and the Central Ambulance Communication Centres (CACC). Very few complaints are received through telephone calls. A written report of telephone calls is kept and an investigation is completed and filed.

Written and verbal complaints are recorded on a transmittal sheet which is then used to conduct an investigation.

Type of complaint is classified as either an accident or an incident. The area of concern is also noted (medical service or carrier).

The method of investigation depends on the type of complaint. Some investigations are done by the air ambulance inspectors. In special cases involving aircraft maintenance, the Ministry of Natural Resources, Aviation Services inspectors (licensed in aircraft engineering), Transport Canada, National Transportation Safety Board, or the Ministry of Health's Investigation and Licensing Service are involved. The MATC provides data on actual activities (from tapes and other records for investigations). All complaints received are kept on file at the head office.

The Investigation and Licensing Service handles complaints which involve serious activities (death or problems concerning more than air ambulance activities). They are also used when an arms length approach is required.

An investigation may be done in support of or lead to a coroner's inquest, an OPP investigation or by situations not generated by management. For example, an investigator on call may utilize his or her time to visit air bases to work out any possible

problems. Investigators also provide service inspections which are non scheduled visits. In some cases decisions can be based on eliminating potential or minor incidents which are never raised as complaints.

Comments and recommendations are provided to all investigations which are forwarded to the Investigation and Licensing Service which involved the Air Ambulance Section. The file is then returned to the Air Ambulance Section for remedial action and kept on file.

The Investigation and Licensing Service will examine processes, error in communication, provide proactive reviews and will also provide case studies for call takers and dispatch staff.

Every complaint sent out to another organization for comment or investigation has been duly returned after the complaint has been reviewed by their organization.

Review of Complaints

Attempts were made to profile the complaints received by the Air Ambulance Section. There is no centralized area where complaints are received or filed. Individual staff members handle the complaints directed at their particular areas.

The following is a review of complaints filed with the Air Ambulance Section between 1989 and 1991. This list is not complete, mainly because of the lack of a centralized system. Complaints were received by the section through the minister's office, the deputy minister's office, the assistant deputy minister's office, regional offices, the Medical Air Transport Centre, central ambulance communication centres, etc.

Dispatch—22 complaints:

- Inadequate communication with clients—8
- Delays in transferring the patient—6
- Not following procedures regarding aircraft—3
- Unprofessional communication with clients—3
- Inappropriate patient code given by dispatch —2

- Ministry of Health not accountable for money spent—2
- Physician pressured pilots to fly in bad weather—1

Patients treated poorly—6 complaints

Weather delay—6 complaints

Air Carrier—12 complaints:

- Aircraft flying too low—3
- Insufficient equipment on aircraft—2
- Aircraft safety problems—2
- Landing on a non-designated site—2
- Inconsideration shown to patient—1
- Inappropriate behaviour demonstrated by cabin medical attendant—1
- Carrier misinformed dispatch about air crew availability—1

Poor communication between individuals involved in transfers—3 complaints

Inappropriate use of air ambulance to transfer patients—2 complaints

Air ambulance paramedics taking too long to assess patients—2 complaints

Health and safety of patients and attendants—2 complaints

Miscellaneous—8 complaints:

- Physicians not returned to workplace—1
- Pilot extended duty time—1
- Chartered aircraft transferring undocumented illegal immigrants—1
- Physician insisted on a certain aircraft—1
- Land ambulance attendants helping on an air ambulance flight—1

Appendix G Accident Records*

The number of accidents involving air ambulance in Canada between 1981 and 1992, and the resulting fatalities and serious injuries, are noted below. Average annual volume of transfers is provided to indicate accident rate.

Province	Number of Accidents	Fatalities	Serious Injuries	Annual Volume of Transfers
Ontario	9	7	—	17,000
British Columbia	5	1	2	6,800
North West Territories	4	3	—	not available
Alberta	1	—	1	3,600
Quebec	2	—	—	840
Nova Scotia	1	1	—	55
Newfoundland	1	4	—	700

In Ontario from 1981 to 1992, the nine accidents were:

1. 1984 (Sioux Lookout). Aircraft landed on the second attempt. Came to rest 200 feet past the 300-foot stopway. No fatalities.
2. 1988 (Chapleau). While aircraft was proceeding to the beacon to commence the approach, ground communication was suddenly lost. Wreckage found one mile southwest of airport. Four fatalities.
3. 1989 (Kirkland Lake). Aircraft veered off to the left and struck a snowbank while landing. No fatalities.
4. 1989 (Peelee Island). Following take-off, aircraft clipped trees and crashed into lake. Three fatalities.
5. 1990 (Sioux Lookout). Aircraft made a hard landing with left wing, and right propeller contacted the ground. No fatalities.
6. 1991 (Toronto, Buttonville). Aircraft landed heavily on the runway. No fatalities.
7. 1991 (Peterborough). Crew experienced a roll tendency after lowering flaps. On final approach, aircraft landed with landing gear retracted. No fatalities.
8. 1991 (Timmins). Landing gear problems. Landing made with gear partially extended. No fatalities.
9. 1992 (Thunder Bay Airport). Nose wheel landing gear problems. Landing made with main landing gear extended and the nose wheel in a retracted condition. No fatalities.

* Information provided by Susan Fortier, Transportation Safety Board of Canada, Safety Analysis and Communications.

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